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# JOURNAL

OF THE

# STATISTICAL SOCIETY.

(Founded 1834.)

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VOL. XXXVI.—YEAR 1873.

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LONDON:

EDWARD STANFORD, 6, CHARING CROSS, S.W.

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**LONDON SCHOOL OF HYGIENE  
AND TROPICAL MEDICINE.**  
**(DEPT OF MEDICAL STATISTICS)**

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## JOURNAL OF THE STATISTICAL SOCIETY,

MARCH, 1873.

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JOHN HOWARD *as Statist.* By WILLIAM A. GUY, M.B., F.R.C.P.,  
F.R.S., Professor of *Hygiène*, King's College, London; Consulting  
Physician to King's College Hospital; and one of the Vice-  
Presidents of the Statistical Society.

[Read before the Statistical Society, 21st January, 1873.]

I HAVE sought and obtained permission from the Council to address you at this, the first meeting of the year 1873, on a subject which is unquestionably well timed; and, if I am not greatly mistaken, will not prove wanting in interest, or in practical utility. I say that my subject is well timed, because just a century ago (in the year 1773) John Howard, of Cardington near Bedford, was appointed High Sheriff of his county; and so obtained an opportunity of which he made such good use that not only did he build up for himself that which he cared less than nothing about, an imperishable reputation, but, what was far more to the purpose with him, he purged the English nation of a foul reproach, and freed its civil and military populations alike from an ever present, ever recurring peril. Nay, I may add with truth and without exaggeration, that he became unconsciously the founder of a new epoch both in statistics and in humanity. This I think will clearly appear before I have brought this communication to a close.

The thesis I wish to maintain this evening is, that the John Howard, whom most men know only as the first of philanthropists, was also one of the foremost statisticians of his time; and I wish also to show incidentally that he who was always ready to depreciate himself, led others to take a low and eminently unjust view of the intellectual side of his character, and to see in one of the most intelligent, adroit, and original minded of men, a "dull and even "dreary" man, as it pleased Thomas Carlyle to call him. In selecting these epithets as applicable to one whom he also styled "the "modest, noble Howard," Mr. Carlyle was perhaps led into error by looking only at the patient and toilsome way in which Howard collected facts, but overlooking alike the then novelty and originality

of his method of procedure, and the quick and precious results that followed on its use. This error is exactly such as a man would fall into who should fix his attention solely on the laborious method which we of this Society are compelled to adopt if we would discover or establish any great social truth, overlooking both the scientific insight that prompts our most successful inquiries, and the fruitful issues to which they lead: alive to the dull monotony of the road, but blind to the bright light that shines upon both ends of it.

In order to give to my thesis all the interest that can be made to attach to it, I will place before you so much of the biography of Howard as may serve to illustrate the intellectual side of him, omitting as not suited to my purpose, or to my audience, all discussion as to the consistency of his character, and the harmony of his private life with his public career. Suffice it only to observe that no stain ever rested on his character, no suspicion ever attached to his motives; so that if we are to treat him as a man of science at all, we must see in him such an one in social science as Faraday was in the domain of physics, just as if we view him as a man of action it is with such men as Wellington that we must group him.

Before I present you with those incidents in the life of Howard which throw light on the intellectual side of his character, I will suggest to you some broad general considerations which seem to justify me in claiming for him a high rank among statists.

The statist (or, if you prefer the term, statistician) I take to be one who devotes himself to inquiries practically important to the State, as the legislative and administrative centre of the nation, presumably interested in securing for all its subjects the greatest possible amount of liberty, security, and enjoyment consistent with submission to law and respect for the rights of others. I look upon the statist, too, as one who shares with all men of science a love of truth for its own sake, coupled with a supreme indifference, so it be truth, to the form it assumes, whether that form realise or disappoint his expectations, whether it prove attractive or repulsive. I regard him again, as one who spares neither time nor labour in the prosecution of the particular inquiry in which he is engaged—who plans it with care and forethought, pursues it with patient industry, and takes note with minute accuracy and particularity of all the facts that bear upon it. If his search be directed towards some scientific truth rather than towards some group of facts, he will bring to bear upon his inquiry all the well ascertained rules and principles of that numerical method which we acknowledge here as our instrument of research.

Let it, however, be well understood that we do not expect all men whom we honour with the name of statist to deal largely and logically with numerical and tabular statements. V, habitually

receive with gratitude and respect the recorded labours of those who leave their facts in the rough, as materials for others to make use of. What we require of them is that their facts should not be so few as to be exceptional; that they should be either all the facts relating to the subject of inquiry, or a large sample of them. We want not a handful, but a whole sheaf of wheat.

If a man may be a statist, and yet not bristle all over with figures and tables, then most assuredly was Howard a statist. For no man ever yet set down facts with more minute and scrupulous accuracy; no man ever yet cast them into a mould which gave greater scope for summaries and analyses. Take as instances these two aggregate facts. I thought it a point of interest to know in how many of the prisons visited by Howard, in the few years following his appointment as sheriff, the gaol fever prevailed; and I found, without an undue expenditure of labour, that of 105 prisons he witnessed the disease in 6, and heard of it in 21. So that, putting the two figures together, it was reasonable to infer that the fever haunted at least one-fourth of our prisons. Again, I deemed it interesting to ascertain in how many—in what proportion—of the prisons of England the provisions of the Acts of Parliament passed in 1774 had been carried into effect; and Howard's clear statements of what he saw in his journeys, made in 1776 and 1779, enabled me without difficulty to state the cases of strict obedience to the Acts when compared with those in which they had been but imperfectly carried into effect as 15 to 130.

But Howard did not always leave his facts in the rough to speak for themselves. He not only made brief and judicious comments upon them, but he resorted to the statistical method of tabulation and tabular analysis where he thought that any good purpose was to be answered. Thus at p. 22 of the second edition of his "State of 'Prisons,'" he tells us that, in the spring of 1776, he summed up carefully the total number of prisoners in the sundry prisons, so as to present a list of 4,084; and this list has its distinct headings and divisions, with needful explanations attached. To this table, too, he attaches an estimate, founded on his own facts, of the number of dependents (namely, wives and children) that might be assigned to each man in prison. By adding the number of dependents to the number of prisoners, he arrives at the number of persons *distressed*, as the result of imprisonment. It is 12,252. And he seems pleased to substitute this census for the guesses of others, though it weakens the force of his appeal. The number of prisoners and their dependents, he says, had been "greatly magnified by conjectural computations." In another table, Howard so groups his facts as to distinguish years of peace from years of war, and to show that crimes were in excess when the nation was at peace.

Let me add that Howard's work on "Lazarettos," which contains a vast store of facts relating to prisons, hospitals, and schools, has also an appendix of thirteen carefully compiled tables, relating to prisoners, their crimes, and sentences, to one of which (the twelfth) he appends a note worth quoting. After excusing himself for repeating some tables contained in his earlier publication, he adds these characteristic words :—"And may I not indulge the hope that, many " years after I shall be dead and forgotten, these tables, being of a " public nature, will be occasionally reviewed, and may have infe- " rences drawn from them which will, in their consequences, con- " tribute to alleviate the *miseries* of mankind, and add something to " the general stock of *happiness* among the human race?"

Of these tables suffice it to add that their arrangement, and the lucid statements by which the words they contain are defined and limited, would do no discredit to the writers of the papers that have given the members of this society the greatest pleasure and satisfaction.

Reverting now to the sketch I ventured to give of the character of the statist, I think that I have said all that is needed to prove that Howard is fully entitled to all the honour which that epithet confers. His inquiries were directed to objects most important to the State; he possessed in a degree never surpassed, perhaps never equalled, a love of truth; he spared neither time, labour, nor money in prosecuting his inquiries; he exhibited care and forethought in his plans, the most patient industry in carrying them into effect, the most minute accuracy in recording his facts; and, where that was required of him, no common skill in arranging and tabulating them.

I now invite your attention to that connected account of Howard and his labours which I promised you, as the means of rightly estimating the intellectual side of his character.

To one having this object in view, I know of no better starting point than Howard's election as a Fellow of the Royal Society. I begin by submitting a copy of his nomination paper. It runs thus :—

"John Howard, Esqre, of Old Broad Street, London, having for " some years pursued mathematical studies, and being desirous of " the honour of being admitted into the Royal Society, we on our " personal knowledge of him recommend him as a true lover of " natural philosophy."

" MACCLESFIELD.

" PARKER.

" JOHN CANTON.

" JOHN ELICOTT."

" Balloted and elected May 13, 1756."

I here stop to observe that Benjamin Franklin, whose nomination paper was signed by the first three names on this list among others,

was elected on the 29th day of the previous month, in the same year.

The first remark that I have to make on this document is that Howard's election took place when he was only 30 years of age, for there is good reason to believe that he was born in 1726. Here, then, we have the son of a successful London tradesman, of quiet and retired habits of life, somehow or other so commanding himself to the scientific men of his time that at the early age of 30 he is proposed and elected a Fellow of the Royal Society, and recommended to their notice not merely as a true lover of natural philosophy, but as one who had for some years pursued "mathematical studies." The next remark I have to offer in reference to this election of Howard is that there is nothing whatever in the circumstances attending it to impair its value as a recognition of merit. In the year 1756 just twenty names were added to the list of members. Of these nine were foreign, and eleven English. Three out of the eleven (Benjamin Franklin being one of them), had the signatures of George, Earl of Macclesfield (the then president of the Society), and of his son and successor to the title, Thomas, Lord Parker, at the head of their nomination papers. The papers themselves are not printed forms, but written documents setting forth distinctly and with discrimination the respective claims of the nominees; and in no instance are these claims other than real and respectable. And, lastly, it is well worthy of remark that no event, as far as I can ascertain, had yet occurred in the eventful life of Howard to give him such public prestige as might take the place of scientific merit; for, though his captivity in France, his sufferings, and his successful intercession with the Commissioners of Sick and Wounded Seamen, which first brought him under the favourable notice of the public, took place in the same year, 1756, in which he was chosen a Fellow of the Royal Society, they occurred subsequent to his election, and could not, therefore, have had any influence upon it.

For the reasons now assigned I am clearly of opinion that, when the nomination paper credits Howard with having "for some years pursued mathematical studies," and with being "a true lover of natural philosophy," it means what it says; and that Howard had done something or other to entitle himself to be spoken of in such terms by the then president of the society, and by such competent judges of merit as Canton and Ellicott. In saying this I am aware that I differ from his personal friend and biographer, Dr. Aikin, who thought that the honour of the fellowship was not conferred upon him "in consequence of any extraordinary proficiency in science" "which he had manifested, but rather in conformity to the laudable "practice of that society of attaching gentlemen of fortune and

“leisure to the interests of knowledge.” It will be inferred from what I have just stated that there are no indications of this laudable practice to be found among the twenty elections of the year 1756. At the same time I should wish it to be understood that I do not claim for John Howard any “extraordinary proficiency in science;” enough for my purpose that he should be in a fair degree what his nomination paper represents him as being. Indeed, I find all the proof I require of this fact in a very curious and significant passage in this very biography of Dr. Aikin. After stating that “Mr. Howard was not unmindful of the obligation” his election had placed him under “to contribute something to the common stock “of information,” and adducing as proof his three brief communications to the Society, published in volumes liv, lvii, and lxi, of the “Transactions”—on the Cold at Cardington in 1763, on the Heat of the Bath Waters, and on the Heat of the Ground on Mount Vesuvius—he tells us that “meteorological observations were much “to his taste;” and that, “even in his later tours, when he was “occupied by very different objects, he never travelled without “some instrument for that purpose;” and winds up with this conclusive testimony to his being a “true lover of natural philosophy:”—“I have heard him likewise mention some experiments on the effects “of the union of the primary colours in different proportions, in “which he employed himself with some assiduity.” As no date is given for these experiments, I can only conjecture that they may have been made some time previous to his thirtieth year, when he was elected a Fellow of the Royal Society.

That I may throw all the light possible on Howard’s intellectual character and attainments, I ask you to allow me to detain you for a short time while I add from this same source (the biography of his personal friend, Dr. Aikin), what he gleaned from Howard himself of his early education. Dr. Aikin tells us that he was first sent to a school kept by a master who seems to have had more learning than power of imparting knowledge; so that Howard, speaking with unwonted indignation, used to allege that he left this school at the end of seven years “not fully taught any one thing;” and, though he went from this school to the academy of Mr. Eames, a most learned and accomplished man and able mathematician, Howard does not seem to have remained under his roof long enough to repair the consequences of his father’s first mistake. But it is worthy of note that this short residence with Mr. Eames was the means of bringing him into contact with Dr. Price, and of laying the foundation of a life-long friendship, cemented by constant assistance on Price’s part, which Howard was wont to acknowledge with expressions of the most fervent gratitude.

In consequence, as it is reasonable to infer, of defects in his early

training, Dr. Aikin, in answer to some who had attributed to Howard "considerable proficiency in letters," says:—"I feel myself obliged, "from my own knowledge, to assert that he was never able to "speak or write his native language with grammatical correctness, "and that his acquaintance with other languages (the French "perhaps excepted) was slight and superficial." Upon this statement Dr. Aikin remarks that this very difficulty in expressing himself strengthens our estimate of "the powers of his mind."

After speaking of the "spirit of order and knowledge of common "affairs" which Howard imbibed during his apprenticeship to a wholesale grocer in the City, and of his early travels in France and Italy, Dr. Aikin tells us that, on his return from abroad, "he mixed "in the world, and lived in the style of young men of leisure and "fortune," that he had a "taste for the arts," and "was not without "out an attachment to reading and the study of nature." All his biographers, I may add, take note of his study of medicine as it was then taught and understood; and we have abundant evidence in his own writings that his views on such matters as cleanliness and ventilation were clear and precise, and that he was in the habit of prescribing for sick persons whom he encountered in his foreign travels, having great faith in the efficacy of James's powder.

As it is but reasonable to expect that some definite information bearing on Howard's intellectual character and attainments may be gleaned from his own letters, I turn to the collection of them made by the Rev. J. Field. They are thirty-six in number, of which the greater part (twenty-seven) are addressed to his relative, Samuel Whitbread, M.P.; three to Lady Mary Whitbread, giving an account of what he did, saw, and thought during his travels on the Continent; and six to Mr. Whatley, and others, on public business.

A careful reader of these letters will find in them confirmation of the statements made by Dr. Aikin. Howard does not write like a scholar; and here and there we meet with ungrammatical and ill-expressed sentences. As a rule, however, he expresses himself clearly and to the purpose. But in one of his letters, written from Warrington, to Mr. Whatley, under date 27th December, 1779, he alludes very pointedly to the difficulty he found in expressing his ideas clearly, and to "the pain, fatigue, and labour" he underwent "in writing for the press." I have no doubt that this was in part due to his inherent modesty and extreme desire to be accurate; for Dr. Aikin, in describing his course of procedure at Warrington when preparing his great work for the press, tells us that his *diffidence* was such that it was "difficult to make him acquiesce in his own "language when, as frequently happened, it was unexceptionable." This modest appreciation of himself is displayed in a most interesting letter to Mr. Whitbread, dated Cardington, 21st June, 1785,

from which I shall give an extract presently. Then, as to his pursuits and occupations. The first letter of the series, addressed from Cardington to Mr. Whitbread, speaks of his having his "books and instruments" comfortably about him, which he hopes to have more time to enjoy. He has seen the works of the church clock, and thinks that, if properly regulated, it will go well. He is digging and planting, and seeing to the repairs of the church. The second letter, addressed to Lady Mary Whitbread, 13th June, 1770, from Rome, shows not only how fully he appreciates and delights in great works of art, but contains a passage which I extract in full. "I ascended Mount Vesuvius, and when I was up three parts of the hill, the earth was, by my thermometer, somewhat warmer than the atmosphere. I then took the temperature every five minutes till I got to the top. The heat was continually increasing. After I had stood the smoke a quarter of an hour, I breathed freely; so with three men I descended as far as they would go with me, where the earth or brimstone was so heated that, in frequent experiments, it raised my thermometer to 240°, which is near 30° hotter than boiling water, and in some places it fired some paper I put in. As these experiments have never before been made, I thought the account of them might afford your ladyship some entertainment." Again, writing from Stutgard, 26th July, 1770, he speaks of the temperature by his own thermometer; and once again, in a letter from Moscow, written 2nd October, 1789, he says that he finds his thermometer indicating a daily fall of three or four degrees.

At this point I pause for a moment to remind you that, though I have just been quoting from letters written at much later periods of time, it is of the Howard made Fellow of the Royal Society in 1756 that I am speaking—of Howard when he was not yet known as the philanthropist, and had had no opportunity of showing himself as a statist. Dr. Aikin's statements, and the passages quoted from his own letters, concur in presenting him to us as a man complaining of a defective school training, having little command of language, but fond of reading and attached to the study of nature; getting his instruments and books about him at Cardington, and hoping to find time to make use of them, instituting at least one experimental inquiry in the science of optics, and making repeated meteorological observations with the aid of the thermometer. We do not know in what his alleged mathematical studies consisted, but he was justly designated as a true lover of natural philosophy.

All this might truly be affirmed of John Howard at the age of 30, in the year 1756.

But in this same year 1756, Howard, in consequence of a most painful yet most fortunate occurrence, his captivity in France, may

be said to have had his first opportunity of showing himself a statist, by minute and sustained inquiries into a matter of profound interest to the Government: I mean the treatment in France of our prisoners of war. In a note at p. 14 of his great work on "The State of Prisons," after describing his own sufferings and those of his fellow prisoners, he tells us how, being liberated on parole, he kept up a correspondence with his countrymen, and obtained evidence of the cruelty with which they were being treated, of many hundreds perishing, and of thirty-six being buried in a hole at Dinan on one day. Returning to England, still on parole, he tells us that he made known to the Commissioners of Sick and Wounded Seamen "the sundry particulars, which gained their attention and thanks. Remonstrance was made to the French Court; our sailors had redress; and those that were in the three prisons mentioned above (Brest, Morlaix, and Dinan), were brought home in the first cartel ships." These *sundry particulars*, relating to a most valuable section of the community, carefully collected and truthfully reported, carried straight home to the authorities with whom it lay to obtain redress, constituted Howard's first contribution to statistics, his earliest claim to the name of statistic.\*

This, I repeat, occurred in 1756, when Howard was 30 years old; and I now ask you to place yourselves at a new stand-point, the year 1773, midway between the date of the occurrences which I have been describing and the year 1790, the date of Howard's death. Prior to this year 1773 we have a period of seventeen years, after it another period of seventeen years. Howard was now 47 years of age. The events of the first seventeen years were—his settling at Cardington, his happy second marriage in 1758, the birth of his only child, and loss of his wife, in 1765, a visit to Bath in 1767, a tour through Italy, Germany, and Holland in 1769-70, his return to Cardington in 1770, and continued residence there till 1773. The degree of cold at Cardington in the "winter of 1763, when Bird's thermometer was as low as  $10\frac{1}{2}$ °," was the subject of his first paper to the Royal Society, and proves that he was then residing there. But the work that stamped the first period of seventeen years with a character of its own was that continuous and progressive improvement in his estate at Cardington, which consisted in the pulling down and rebuilding of all his cottages, and of all others that he could purchase, and their reconstruction, coupled with other local improvements which I have no time to particularise. Suffice it to say that this was probably the earliest, and certainly the most complete, work of physical, and incidentally of moral

\* I have searched the minute book of the Commissioners for the year 1756, the end of 1755, and beginning of 1757; but have been disappointed. Howard's name does not occur in any of the entries. The minute book is at the Record Office.

regeneration, undertaken by any English landlord. To its thorough-going and truly practical character, and the transformation it effected in the health and habits of the people, all Howard's biographers bear testimony.

So that we have this first period of seventeen years ushered in by an inquiry, followed by practical results, which entitles Howard to take high rank among statisticians, and marked throughout by local improvements based upon so clear an apprehension of the true conditions of health and physical well-being as entitles him equally to a foremost place among sanitary reformers. Admit his fair claim to be deemed a true lover and successful cultivator of natural philosophy, and you have John Howard already before you as philosopher, statistician, and sanitary reformer.

How the second period of seventeen years was spent most men know, at least in that general way in which we have cognisance of things that we do not care much about. I have only time to give you a brief statement of leading facts.

When Howard was appointed sheriff of the county of Bedford, he found that one of the duties of his office was to visit the prisons, and accordingly he set to work without loss of time to discharge this duty. He soon found that an English prison in those days was the scene of a great wrong—the exaction of illegal fees; and this seemed to him so cruel and unjust a thing, leading as it did to the detention of innocent persons, that he applied to the justices of the county for a salary to the gaolers in lieu of fees; but they thought they had no power to act without a precedent. Howard, therefore, rode into several neighbouring counties in search of one, but found the same injustice practised in them all. He then extended this his first journey till he had visited most of the county gaols of England. Finding that the most wretched inmates of some prisons had been brought there from the bridewells, he set out afresh, and examined both the houses of correction and the county and town gaols. And now it was that his attention was called to the gaol fever, which he found leagued with small-pox, doing its work of destruction everywhere.

This truly statistical inquiry was crowned next year with the success it so richly merited. The House of Commons heard his evidence, thanked him, and forthwith passed two Acts, one for the relief of prisoners from illegal extortion, the other for preserving their health and preventing the gaol distemper.

This took place in March, 1774. After stating this fact, Howard gives us the following simple account of his motives:—"I was "called to the first part of my task by my office; and prompted to "the pursuit of it by the sorrows of the sufferers, and love to my "country. The work grew upon me insensibly. I could not enjoy

" my ease and leisure in the neglect of an opportunity offered me  
" by Providence of attempting the relief of the miserable. The  
" attention of Parliament to the subject led me to conclude that  
" some additional labour would not be lost, and I extended my  
" plan."

Let me give you some idea of what this additional labour and extension of plan meant. It was the most extraordinary series of travels, inquiries, and personal experiences on record. What highly wrought religious emotions have prompted the founders and apostles of new religions to undertake and perform, that and nothing less did this man do under the compulsion of a sense of duty, sobered down by the most minute and laborious attention to fact, but redeemed from all that is cold and harsh by the bright warm rays of humanity and patriotism which fell on all that he did, thought, or suffered.

To show you what Howard did in the last seventeen years of his life, I shall make use of Dr. Aikin's summary, with such additions as an analysis of the personal narrative contained in his works has enabled me to make:—

1773. High Sheriff of Bedfordshire. Visits many county and town gaols, in search of a precedent for substituting for illegal fees a fixed salary to gaolers.

1774. Completes his survey of English gaols, visiting the bridewells, and revisiting many town and county gaols to become better acquainted with the gaol fever and the small-pox. Gives evidence before a committee of the House of Commons. Stands candidate for Bedford.

1775. Travels in Scotland and Ireland, and in France, Holland, Flanders, and Germany, in search of information that might prove useful to England. Visits some English prisons.

1776. Again in the same foreign countries, and in Switzerland. A large number of English prisons again visited.

1777. Prints his "State of Prisons."

1778. Travels through Holland, Flanders, Germany, Italy, Switzerland, and part of France. Some English prisons visited.

1779. Revisits all the counties of England and Wales, and travels into Scotland and Ireland. Inspects all the prisons in which French prisoners of war were confined, and the hulks. Acts as supervisor of penitentiaries.

1780. Prints his first appendix.

1781. Travels in Denmark, Sweden, Russia, Poland, Germany, and Holland.

1782. Again inspects all the English prisons, and travels in Scotland and Ireland.

1783. Inspects other English prisons. Travels in Scotland

and Ireland. Visits Portugal, Spain, France, Flanders, and Holland.

1784. Prints his second appendix, and a new edition of his works.

1785-87. From the close of the first of these years to the beginning of the last, journeys through Holland, France, Italy, Malta, Turkey, and Germany: then through Scotland and Ireland.

1788. During this and part of the preceding year travels over all England, and revisits Ireland, inspecting the charter schools, and reporting upon them to the House of Commons.

1789. Prints his work on "Lazarettos," containing valuable information on hospitals, poor houses, and schools, and a brief account of English prisons as he saw them for the last time in 1787-88. Travels through Holland, Germany, Prussia, and Livonia to Russia and Lesser Tartary.

1790. Dies at Cherson, 20th January.

But no summary can do justice to this history of seventeen years of laborious research. To understand Howard, his work and his motives, a man must study his writings. From them he will learn how reasonable were the motives that impelled him to action, how careful and systematic his mode of procedure, how calm, philosophical, and yet original and far-sighted, the views he formed, how searching and comprehensive his inquiries. The prison and the prisoner were the first objects of his solicitude; but the hospital and the lazaretto, the school and the workhouse came in for a share of his attention. Indeed he seems to have felt that, as the prison had revealed itself to him as the scene of abuses of all sorts, so it was but reasonable to expect that the hospital, the workhouse, and the school should bear marks of the same ignorance and neglect; and that as by his magic method of inspection and record, he had in one short year brought about the legal reform of English prisons, so by the same simple though laborious procedure he might succeed in reforming such abuses in other public institutions as he had earned the right to expect to find there.

And now I ask your attention to a single specimen of Howard's statistical work.

Howard's account of the gaols he inspected is to be found partly in his first work on the "State of Prisons," and partly in his second work on "Lazarettos." In the former work we find the results of his first visits in search of precedents, of his second visits prompted by what he saw of the peculiar wretchedness of certain prisoners transferred from the bridewells to the county and borough gaols, and of his third and fourth series of inspections to which he was moved by hearing that the provisions of the beneficent Acts of 1774 had been disregarded or negligently enforced. The

latter work contains shorter notices of his fifth and sixth tours of inspection, to which he seems to have been led by the motive last named, joined to his experience of the beneficial consequences of his previous visits.

In selecting a prison for the purpose of illustration, I reject extreme cases, and prefer, as giving a fair view of what was common in those days, the county gaol at Warwick. Howard's description of it consists, as usual, of three parts—a tabular systematic statement comprising the names and salaries of the gaoler, chaplain, and surgeon; the dates of his own visits, and the number of prisoners, classed as debtors and felons &c., at those dates; and sundry particulars respecting beer and garnish. This first part is so arranged as to admit of easy comparison with the like particulars relating to other prisons. The second part consists of a description of the prison and of the information he obtained by observation and inquiry. In the third part he prints copies of such tables of fees and orders of the justices as he finds in operation.

The following is an abbreviated account of what Howard found in Warwick Gaol at his six visits made 22nd November, 1773, 10th November, 1774, 6th January and 30th October, 1776, 26th March, 1779, and 15th February, 1788. The gaoler had no salary, but charged a fee of 14*s.* 6*d.* to debtors, and 13*s.* 4*d.* to felons; had 8*l.* a-head (less a guinea paid to the clerk of assize) for each transport, and brewed the beer which the turnkey had a licence to sell. The prisoners who were debtors had no allowance; but felons received a 3-lb. loaf every other day. Garnish is set down at 2*s.* 6*d.* The chaplain and surgeon were salaried officers. The number of prisoners at the several visits was:—1773, 23 debtors, 9 felons &c.; 1774, 13 and 13; 1776 (January), 24 and 33, (October), 22 and 7; 1779, 22 and 28; 1788, 31 and 51, and women convicts, 9.

The description of the prison, taken, be it recollect from the second edition, published in 1780, runs thus:—

“ One court for debtors and men felons. Women felons have “ quite separate court, day-room, and two night-rooms. They used “ to be loaded with irons, now they have none. Men felons have “ a day-room; their night-room is an octagonal dungeon, about “ 21 feet diameter, down thirty-one steps, close, damp, and offensive. “ Two cells in another dungeon for the condemned. Prisoners are “ tried in the county clothing. I saw twelve suits for men, and six “ for women. Debtors' common day-room is the best, which is also “ used as a chapel. For master's side, ten or twelve rooms, some “ of them *the Rooks Nest*, where also is the free ward.

“ No infirmary. The late gaoler, Mr. Roe (uncle to the present), “ died in 1772, of the gaol distemper, and so did some of his

“ prisoners. No water then, but now plenty. The felons’ allowance “ of bread is judiciously fixed by weight, not variable with the “ price. Debtors have in common, from a legacy, 30s. a-year, and “ from another legacy eight three-penny loaves at the beginning, “ and as many at the end, of every month. No memorial of either “ legacy hung up in the gaol.

“ The prison might be improved on the adjacent ground belonging “ to the county.

“ The justices of this county have taken the gaol and bridewell “ under consideration, and propose that debtors and felons, and also “ men and women, in both shall be entirely separated. A chapel “ and infirmary also are designed. May it not be hoped that “ gentlemen so considerate will not continue the damp and offensive “ dungeon, which has only an aperture level with the court, 3 ft. “ 2 in. diameter.

“ There were hung up in the debtors’ hall, some rules against “ profaneness, rioting, and drunkenness, with penalties annexed; “ but I was sorry to find among them that ‘every debtor at his or “ ‘ her first coming must pay for garnish 2s. 6d.’ ”

The foregoing is extracted, as I have stated, from the second edition of the “State of Prisons,” published in 1780. What follows is from Howard’s work on “Lazarettos,” printed in 1789. After this interval of nine years, Howard could still write as follows:—

“ The felons were sadly crowded. Only one small day-room for “ the men; and I saw thirty-two lie chained in a dungeon of “ 22 ft. diameter, down 31 steps, two of whom were ill of a slow “ fever. There were three others in a room, very ill and in irons. “ In two rooms ( $7\frac{1}{2}$  ft. by  $6\frac{1}{2}$  ft.) with apertures only in the doors, “ there lay fourteen women, almost suffocated. None of the women “ were now in irons. No infirmary; no bath. The Act for pre- “ serving the health of prisoners not hung up. No coals. Allow- “ ance, a 3-lb. loaf every other day: it was good bread and full “ weight. Convicts have not the half-crown a-week. Acquitted “ prisoners are kept in irons till the judge leaves the town. “ Executions are at the gaoler’s expense. The prisoners receive “ yearly from a legacy, 1l. 10s., the rent of a house in the town. Some “ of the felons complained of having been forced to pay 4s. 2d. for “ garnish, or be stripped of their clothes. This is one of the bad “ effects of the admission of beer. The debtors pay for garnish a “ much larger sum. Gaoler’s salary 60l. in lieu of the tap.”

To this account there are some interesting notes attached. Of the dungeon it is said that at one time it was “so crowded that “some of the poor wretches were forced to stand up (and take a “sort of miserable night watch), while the others slept;” and that

“ from the aperture of this dungeon, which is 3 ft. 3 in. wide “ (as from the door and the two funnels of the dungeon in the “ gaol at Stafford), the steam of the prisoners’ breath comes out, in “ winter, like the smoke of a chimney.” As a consequence of no coals being allowed, “ the women here, as in other gaols, sell even “ their bread to procure fuel.” As to the expense of executions falling on the gaoler (the practice at Monmouth, Worcester, Warwick, and most other county gaols), it is mentioned as “ an imposition on “ the gaolers, which encourages them to indemnify themselves by “ impositions on their prisoners;” and as to the tap, it is remarked that if it “ had been sooner abolished, it might have saved the life “ of the late gaoler Roe, who died in the prime of life.”

This, then, with the exception of the copy of a table of debtors’ fees, and of an order relating to the admission of visitors, is what Howard found occasion to put on record respecting the county gaol at Warwick. I have stated that in the first part of this report he gives the number of prisoners under two headings of *debtors* and *felons &c.* He adopts the same method and order in the case of all other prisons; and accordingly it was easy for Howard to compile a tabular statement (for which I refer you to p. 243 of his work on “ Lazarettos”), of the total number of the two classes confined in all the prisons of England in any of the years when he visited them. The table to which I refer gives the numbers for the year 1787 or 1788. They were as follows:—

Total number of debtors .....	2,011
”      felons, &c. ....	2,052
”      petty offenders .....	1,412
”      prisoners in the hulks .....	1,937
”      supposed omitted .....	70
	_____
Total number of prisoners.....	7,482
	_____

The figure 70 is explained in a note, thus:—“ Though I have “ visited all the county gaols in England, and almost all the other “ prisons, yet, as there are some few of the corporation prisons “ which I did not see, I have added *seventy* more prisoners to the “ number; so that, probably, we have nearly the *average number* of “ persons confined at *one time* in all the prisons of this kingdom.”

I may add that the number of county and borough gaols so visited is 133, and the number of bridewells 41, making a total of 174; and that the number of visits (including visits to prisons which were empty, and are not comprised in the total of 174) is no less than 818.

In the sample and table I have just brought under your notice, you have good specimens of Howard’s method of procedure. He could marshal the staple facts relating to each prison in perfect

order, could describe its peculiar features in condensed and intelligible language ; and could put his facts together into tabular shape in a thorough workman-like way. All his details are curiously minute. A window has such and such dimensions ; a loaf of bread has a certain weight by his own steel-yard ; a dungeon is down so many steps ; so many persons are crowded into a room so many feet high, broad, and long. In his visits, too, to hospitals and schools, and to lazarettos, respecting one of which he took care to obtain personal experience, he exhibits the same sound method of procedure as in the case of prisons ; and, when he left England on his tour of inquiry respecting the plague, he went armed with a set of queries by his friends, Drs. Aikin and Jebb, to be put to some of the most experienced physicians in the places he visited. The answers to those questions Howard brought back with him, and caused them to be methodised and abridged by Dr. Aikin. The results will repay study, and justify the method Howard adopted, which, I may remark, is one often sanctioned by the practice of the Council of this Society. I think, then, that I may assume my thesis, which affirms John Howard to deserve the title of statist, to have been maintained ; so that if we could suppose his facts and tabular summaries, his questions and answers respecting the plague, his rational inferences and statesman-like views on all the subjects that he handled, to be brought before us now in this year 1873, the centenary of the felicitous appointment which gave him his opportunity and authority to inquire, we should, beyond all doubt, accord him a hearty and unanimous vote of thanks as one who had fulfilled all our requirements and earned a foremost place among the most esteemed of our Fellows.

To vindicate Howard's right to a place of the highest honour among those to whom we now give the name of *statist* or *statistician* has been the sole object of this paper ; and I should overstep the limits I have assigned to myself, as well as run the risk of wearying you, if I yielded to the very natural temptation of trying to give to Howard all the praise he merits, or to defend him against all the censure he has incurred. But as I have deemed an inquiry into Howard's character as a man of intellect a reasonable offshoot from my main purpose, I must ask you to allow me briefly to refer to one cause which has very naturally led to misapprehension upon this point. I mean Howard's uniform and systematic depreciation of himself—the only point, I may safely affirm, in which he cannot be implicitly trusted as the propounder of truth, without favour, prejudice, or exaggeration.

This self-depreciation is so thoroughly a part of Howard's character that it forces itself to the surface, so to speak, on all possible occasions. Whether he is engaged in conversation, or deliberately

committing his thoughts to writing, he betrays the same sensitive shrinking alike from self-satisfaction and from praise. He forms the same mean estimate of his personal appearance as of his mental endowments. He takes as much pains and resorts to as many ludicrous expedients to baffle the artists who lie in wait for him to sketch what he calls “his insignificant form and ugly face,” as he did when in France to escape from the persecutions of the French Police. He lowers his merit to the level of those who elect to find their pleasure in packs of hounds, studs of horses, or social entertainments. He speaks of his pursuits as *a whim*, his *hobby horse*. At the best he is “the *plodder*, who goes about to collect materials for “men of genius to make use of.” In the “*conclusion*” to his great work on “*Lazarettos*,” written in 1789, when he had surely earned the right to speak otherwise of himself, he says (alluding to prison abuses), “If I have been able to point out any of these, and to “suggest their *causes* and *remedies*, it has been by that *close*, “*persevering* attention to *one* object, which has in some measure “supplied the want of original abilities, and given me clearer “notions, and a more decided opinion on these matters.” And this is the tenor of his private correspondence, no less than of the passages that are to meet the eye of the public; for in a letter written in 1785 to his friend, Samuel Whitbread, he speaks of his *very moderate parts*, and the necessity of *long and continued application* if he would master any subject.

Nevertheless, whenever he has reason to believe that his opinions are based on experience, he maintains them firmly, but courteously. Thus, in a foot note to the *conclusion*, from which I have just been quoting, he combats the opinion of “gentlemen of the faculty” that fermented liquors are necessary as antiseptics, and adds: “I am “sensible my ideas are contrary to the present *fashionable* mode of “prescription, which I am persuaded *confirms* the habit of drinking “strong liquors, both in town and country; but may I not hope “that the *opinions* of medical gentlemen will, in time, alter as *much* “upon this subject as I have seen in *their* treatment of the small “pox?”

Howard’s opinions on matters belonging to the domain of *hygiène* are also very precise and decided. Thus, in a foot note appended to the account of the county gaol, Lancaster Castle, in his work on “*Lazarettos*,” he says, in answer to the question what size he would wish prisoners’ solitary night-rooms to be, “10 feet long, “10 feet high, and 8 feet wide; thus adopting a mean between the “two extremes allowed by the Act of Parliament for penitentiary “houses (19th Geo. III).”

How averse Howard was to any public recognition of his services (excepting such honours as D.C.L. and the presentation of the

freedom of a city), is seen by the whole tenor of his correspondence on the subject of the proposed erection of a monument to him during his life-time. And yet, with all this shrinking from praise, there was in Howard none of the false shame, none of the *mauvaise honte*, which perhaps belongs naturally to men whose motives are dashed with selfishness and conceit. He is, every inch of him, a Christian gentleman of the true English type. With all his manly, sturdy independence, he has no churlish disrespect for conventional greatness. His letters to Lady Mary Whitbread are eminently courteous and respectful. If he can impart any useful information in the highest quarters, he will not decline to accept Royal courtesies and hospitalities. He will not, it is true, obey the summons of Catherine of Russia, but he will dine with the Emperor of Austria, and accept his Royal courtesies in a becoming spirit; and if the Pope will allow him to assert his rights of manhood, he will not refuse the proffered blessing of an old man.

This is not the place nor the occasion to discourse on the moral and religious character of Howard, or to vindicate him from the misconceptions of those who have written about him; but it is the place and the time to protest with all earnestness against any and every attempt to lower his intellectual character to the level of his own modest misconceptions, or the mistakes of those who have thoughtlessly or ignorantly taken him at his word.

Let those who would deny him the possession of what has been termed *scientific insight*, or withhold from him the credit of original genius, first study his works, and then compare the worst of the prisons of England, as prisons are now, with the best as they were a century ago, and they will be forced to acknowledge that in every leading principle of prison management and discipline, as they are now understood by the most advanced students of such matters, we who live in this year 1873 are but the disciples of the *modest, noble Howard*, who, to the honour of England, the good of the whole civilised world, and the credit of our common humanity, was appointed Sheriff of Bedford a century ago.

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*The RELATIVE SUPPLIES from TOWN and COUNTRY FAMILIES, to the  
POPULATION of FUTURE GENERATIONS.* By FRANCIS GALTON,  
F.R.S.

[Read before the Statistical Society, 21st January, 1873.]

THIS is an inquiry into the relative fertility of the labouring classes of urban and rural populations, not as regards the number of children brought into the world, but as regards that portion of them who are destined to live and become the parents of the next generation. It is well known that the population of towns decays, and has to be recruited by immigrants from the country, but I am not aware that statistical measurement has yet been attempted of the rate of its decay. This inquiry is part of a larger one, on the proportionate supply to the population from the various social classes, and which has an obvious bearing on investigations into the influences that tend to deteriorate or to improve our race. If the poorer classes, that is to say, those who contain an undue proportion of the weak, the idle, and the improvident, contribute an undue supply of population to the next generation, we are justified in expecting that our race will steadily deteriorate, so far as that influence is concerned. The particular branch of the question to which I address myself in this memoir is very important, because the more energetic of our race, and therefore those whose breed is the most valuable to our nation, are attracted from the country to our towns. If, then, residence in towns seriously interferes with the maintenance of their race, we should expect the breed of Englishmen, so far as that influence is concerned, to steadily deteriorate.

I am well aware that the only perfectly trustworthy way of conducting the inquiry, is by direct investigation. I mean that a large number of women living under urban or rural conditions of life, and the same number in either case, should be noted as they arrived at a marriageable age, say æt. 20, and that the number of children they bear, who survive to a marriageable age, should also be noted. We might do this prospectively, but it is impossible, from want of historical data, to work backwards. I therefore have had recourse to an indirect method, based on a selection from the returns made at the last census, which I submit to the criticism of others as appearing to myself calculated to give a fair approximation to truth. The principle on which I have proceeded, is this:—

I find (A) the number of children of an equal number of urban

and rural mothers, within certain limitations of age, and I correct the results on the following grounds, which I will shortly explain more fully, namely, (B) the relative mortality of the two classes between childhood and maturity; (C) the relative mortality of the mothers during childbearing ages; (D) relative celibacy; and (E) the span of a generation. It will be seen that B and C are substantial corrections, but that I have not occasion to pay regard to D and E.

Returns were made in the census schedules of the names and ages of the members of each "family," by which word we are to understand those members of the family in its ordinary sense, who are alive and resident in the same house with their parents. Where the mothers are still young, the children are necessarily very young and nearly always (in at least those classes who are unable to send their children to boarding schools), live at home. If, therefore, we limit our inquiries to the census families of young mothers, the results will be identical within the same limits of age with what we should have obtained if we had direct means of ascertaining the number of their living children. The limits of age of the mothers which I adopted in my selection were, 24 and 40 years. Had I to begin the work afresh, I should prefer the period from 20 to 35, but I have reason to feel pretty well contented with my present data.

In deciding on the districts to be investigated, it was important to choose well marked specimens of urban and rural populations. In the former, a town was wanted where there were various industries, and where the population was not increasing. A town where only one industry was pursued, would not be a fair sample, because the particular industry might be suspected of having a special influence, and a town that was increasing would have attracted numerous immigrants from the country, who are undistinguishable as such in the census returns. Guided by these considerations, I selected Coventry, where silk weaving, watchmaking, and other industries are carried on, and whose population has scarcely varied during the last decade. It is an open town, in which the crowded alleys of larger places are not frequent. Its urban peculiarities are therefore minimised, and its statistical returns would give a picture somewhat too favourable of the average condition of life in towns. For specimens of rural districts, I chose small agricultural parishes in Warwickshire.

By the courteous permission of Dr. Farr, our president, I was enabled to procure extracts from the census returns concerning 1,000 "families" of factory hands at Coventry, in which the age of the mother was neither less than 24 nor more than 40 years, and concerning another 1,000 families of agricultural labourers in rural

parishes of Warwickshire, under the same limitations as to the age of the mother. When these returns were classified (see Table I, p. 24), I found the figures to run in such regular sequence as to make it certain that the cases were sufficiently numerous to give trustworthy results. It appeared that:—

(A). The 1,000 families of factory hands comprised 2,681 children, and the 1,000 of agricultural labourers comprised 2,911; hence, the children in the urban "families," the mothers being between the ages of 24 and 40, are on the whole about 8 per cent. less numerous than the rural. I see no reason why these numbers should not be accepted as relatively correct for families, in the ordinary sense of that word, and for mothers of all ages. An inspection of the table does indeed show that if the selection had begun at an earlier age than 24, there would have been an increased proportion of sterile and of small families among the factory hands, but not sufficient to introduce any substantial modification of the above results. It is, however, important to recollect that the small error, whatever its amount may be, is a concession in favour of the towns.

(B). I next make an allowance for the mortality between childhood and maturity, which will diminish the above figures in different proportions, because the conditions of town life are more fatal to children than those of the country. No life tables exist for Coventry and Warwickshire; I am therefore obliged to seek elsewhere to learn the amount of the allowance that should be made. The life tables of Manchester\* will afford the necessary data for towns, and those of the healthy districts† will suffice for the country. By applying these, we could learn the number of the children of ages specified in the census returns who would attain maturity. I regret extremely that when I had the copies taken, I did not give instructions to have the ages of all the children inserted; but I did not, and it is too late now to remedy the omission. I therefore proceeded as follows to make a very rough, but not unfair, estimate. The average age of the children is about 3 years; now, taking 25 years as representing the age of maturity, it will be found that 74 per cent. of children in Manchester, of the age of 3, reach that of 25, while 86 per cent. is the proportion in the healthy districts. Therefore, if my rough method of correction be accepted as approximately fair, the number of adults who will be derived from the children of the 1,000 factory families should be reckoned at  $2681 \times \frac{74}{100}$ , and those from the 1,000 agricultural at  $2911 \times \frac{86}{100}$ .

\* "Seventh Annual Report of Registrar-General."

† Healthy Districts Life Table, by Dr. Farr. "Phil. Trans. Royal Society," 1859.

(C). We ought to compare the families of the same number of urban and rural women who had reached the age of 24. Many of them will not marry at all; I postpone the consideration of these to the next paragraph. Many of the rest will die before they reach the age of 40, and more of them will die in the town than in the country. It appears from data furnished by the above-mentioned tables, that if 100 women of the age of 24 had annually been added to a population, the number of those so added, living between the ages of 24 and 40 (an interval of seventeen years) would be 1,539 under the conditions of life in Manchester, and 1,585 under those of the healthy districts. Therefore the factors to be applied respectively to the two cases, on account of this correction, are

$$\frac{1539}{17 \times 100} \text{ and } \frac{1585}{17 \times 100}.$$

(D). I have no trustworthy data for the relative prevalence of celibacy in town and country. All that I have learnt from the census returns is, that when searching them for the 1,000 families, there were noted 131 bachelors between the ages of 24 and 40, among the factory hands, and 144 among the agricultural labourers. If these figures be accepted as correct guides to the amount of celibacy among the women, it would follow that I must be considered to have discussed the cases of 1,131 factory, and 1,144 agricultural women, when dealing with those of 1,000 mothers in either class. Consequently that the respective corrections to be applied, are given by the factors  $\frac{1000}{1131}$  and  $\frac{1000}{1141}$ . These would have so small an effect on the relative number of the two classes, as not to be worth applying, for it would be less than 1 per cent., and I do not like to apply it, because it seems to me erroneous and to act in the wrong direction, inasmuch as unmarried women can obtain employment more readily in the town than in the country, and celibacy is therefore more likely to be common in the former than in the latter.

(E). The average length of a generation in town and country, must not be omitted from our consideration. We, however, know that the correction on this ground will be insignificant, because the length of a generation is found to be constant under very different circumstances of race, and therefore we should expect it to be equally constant in the same race under different conditions. I find that one-half of the mothers in my schedule are under 31·25 years of age in the town and 32·5 in the country, but this difference of  $1\frac{1}{4}$  years is fully compensated by the effects of the greater mortality of the children of the former. The omission to which I referred in (B), prevents an exact calculation being made. If the ages of the children had been copied, it would have been easy to have made

the necessary reductions, and to have obtained a table whence the average age of mothers of children destined to reach adult life could have been calculated for town and country.

Let us now sum up the results. The corrections are not to be applied for (D) and (E), so we have only to regard (A)  $\times$  (B)  $\times$  (C), that is—

$$\frac{2681 \times \frac{74}{100} \times \frac{1539}{1700}}{2911 \times \frac{86}{100} \times \frac{1585}{1700}} = \frac{1796}{2334} = \frac{77}{100}.$$

In other words, the rate of supply in towns to the next adult generation is only 77 per cent., or, say, three-quarters of that in the country. In two generations the proportion falls to 59 per cent., that is, the adult grandchildren of artisan townsfolk are little more than half as numerous as those of labouring people who live in healthy country districts.

TABLE I.—*Census Returns of 1,000 Families of Factory Hands in Coventry, and the Age of the Mother and the*

Age of Mother.	Number of Children in Family.									
	0.		1.		2.		3.		4.	
	Factory.	Agri-cultural.	Factory.	Agri-cultural.	Factory.	Agri-cultural.	Factory.	Agri-cultural.	Factory.	Agri-cultural.
24 to 25 .....	28	17	40	31	24	32	12	10	2	—
26 „, 27 .....	19	18	36	24	36	28	23	26	8	8
28 „, 29 .....	18	17	32	16	20*	33	36	23	14	23
30 „, 31 .....	13	4	23	18	24	21	28*	31	18	22
32 „, 33 .....	18	11	16	14	19	13	22*	27	23	26
34 „, 35 .....	14	15	11	6	17	16	28	18	31	34
36 „, 37 .....	12	17	4	11	10	13	22	14	16	20
38 „, 39 .....	8	6	9	15	14	17	16	21	22	23
40.....	8	7	3	10	8	9	13	14	8	10
Total within } outline.....	96	67	158	109	116	111	171	149	—	—
Total between } outlines .....	42	45	16	36	56	71	29	35	142	166
Total beyond } outline.....	—	—	—	—	—	—	—	—	—	—
Total .....	138	112	174	145	172	182	200	184	142	166

\* These three cases are anomalous, the factory being less than the agricultural. In the neither of these can be correct; certainly not the first of them.

*Note.*—It will be observed that within the outline, that is, in the upper and left hand predominate, while the agricultural are the most numerous between the outlines, that is are from four to five in number. The two are equally numerous without the outlines, that

1,000 Families of Agricultural Labourers in Warwickshire, Grouped according to Number of Children in the Family.

Number of Children in Family.										Age of Mother.
5.		6.		7.		8.		9.		
Factory.	Agri-cultural.	Factory.	Agri-cultural.	Factory.	Agri-cultural.	Factory.	Agri-cultural.	Factory.	Agri-cultural.	
I	1	—	—	—	—	—	—	—	—	24 to 25
—	—	—	—	—	—	—	—	—	—	26 „ 27
6	6	4	1	2	—	—	—	—	—	28 „ 29
12	15	2	5	—	2	—	1	—	—	30 „ 31
21	25	9	5	—	1	—	2	—	—	32 „ 33
14	18	12	9	5	3	—	1	—	—	34 „ 35
15	25	12	10	4	5	5	2	—	—	36 „ 37
14	22	10	15	6	7	—	2	1	—	38 „ 39
7	11	3	9	7	7	2	1	—	—	40
—	—	—	—	—	—	—	—	—	—	{ Total within outline
90	123	—	—	—	—	—	—	—	—	{ Total between outlines
—	—	52	54	24	25	7	9	1	—	{ Total beyond outline
90	123	52	54	24	25	7	9	1	—	Total

instance of 20—33, the anomaly is double, because the sequence of the figures shows that of the table, where the mothers are young and the children few, the factory families especially in the middle of the table, where the mothers are less young, and the families is, to the right of the the table, where the families are large.

TABLE II.

	Number of Families.		Number of Children.	
	Factory.	Agricultural.	Factory.	Agricultural.
Within outline .....	541	436	903	778
Between outlines .....	375	476	1,233	1,562
Beyond „ .....	84	88	545	571
Total .....	1,000	1,000	2,681	2,911

NOTES on BANKING in GREAT BRITAIN and IRELAND, SWEDEN,  
DENMARK, and HAMBURG; with some REMARKS on the AMOUNT  
of BILLS in CIRCULATION, both INLAND and FOREIGN, in GREAT  
BRITAIN and IRELAND; and the BANKING LAW of SWEDEN. By  
ROBERT HARRY INGLIS PALGRAVE, ESQ.

[Read before the Statistical Society of London, 18th February, 1873.]

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I.—*Introduction.*

As the subject of Banking has been frequently brought before the Statistical Society of late, it has occurred to me that it might be desirable to endeavour to lay before you a statement of the actual position of the banks of the country at the present time, as far as it can be ascertained. Though it may be impossible to draw such statements up with complete accuracy, yet they may not be without value. They enable a comparative view to be taken of the position of affairs in the country at various periods. More than that, they afford, in the case of a subject like banking, the only correct basis on which a real knowledge of the requirements of the time can be founded. The subject is one which appears to me to require not so much discussion as analysis, and such an analysis it will be my endeavour to lay before you. This Society has, in the *Journals* of former years, several statements similar in nature to this one; and in arranging the method on which this inquiry was to be conducted, I have derived great assistance from the very admirable paper on the same subject written by Mr. Newmarch in 1851. I have also consulted the papers written by Mr. Gilbart and Mr. Babbage. Something like twenty years have passed since the date of the latest of these papers, and those twenty years have witnessed a vast extension of banking operations. My desire is to continue an inquiry commenced by

writers of so much authority. I can scarcely hope that my knowledge equals theirs, but, to make up this deficiency, I have sought and obtained assistance from many friends, and have thus been able, as I believe, to prepare an estimate as exact as is possible of the present position of this subject. I have added an outline of the banking systems in Sweden, Denmark, and Hamburg. In the case of Sweden I have gone into greater detail, and given a translation of the statute by which the business of banking is at present regulated in that country. This enactment, as well as the banking system which has been founded on it, seems to me remarkably well considered and carefully arranged. Sweden, like Scotland, owes very much of her present prosperity to a good system of banking. There are several provisions in the banking law of Sweden which may be studied with advantage here, great as are the differences between that country and this. I had originally intended to have included other countries of Northern Europe in the present inquiry. The difficulty of obtaining reliable and recent information has prevented this from being done. I trust, however, to be able to complete the survey on some future occasion.

## II.—*Statement of Banking in England.*

There are now a great many sources whence information as to the amount of banking capital and deposits in England can be obtained. To commence with the metropolis, the accounts of the Bank of England are published weekly. We may take the average position to be as follows:—

Circulation .....	24	{ millions, of which about 16 is metropolitan, and 8 provincial
Deposits—Public and Private, say	25½	millions
Capital and rest.....	17½	"
	—	
	67	"
	—	

The amounts held by the private bankers in London must be only a matter of conjecture. In 1851 there were thirty-five city bankers and sixteen west end bankers, and Mr. Newmarch estimated their holdings at an average of 1,250,000*l.* each. There were also fifty-one in 1872, and I believe that I am below the mark in estimating their present holdings at 1,500,000*l.* each. This would give 76½ millions as their holdings. Mr. Newmarch allows me to state that he concurs in this as a probable estimate.

The accounts of the joint stock banks in London are published twice a-year. In the Commercial History and Review of 1871, published by the "Economist," the deposits and the capital of the

eleven principal London joint stock banks are given at 31st December, 1871, as—

	£
Paid-up capital and reserve.....	10,950,000
Deposits (including acceptances in the case of} the London Joint Stock).....	$\{$ 84,730,000
	95,680,000

The particulars are as follows:—

TABLE I.—*London Joint Stock Banks, Two Half-Years 1871, Deposits and Capital.*

[0,000's omitted, thus £26,22 = £26,220,000.]

Banks.	When Founded.	Deposits and Cash.		Capital Paid-up and Reserve.	
		31st December.	30th June.	31st December.	30th June.
1. London and Westminster	1834	£ 26,22	22,77	£ 3,00	3,00
2. „ Joint Stock* .....	'36	17,79	14,61	1,64	1,64
3. Union.....	'39	13,80	12,71	1,50	1,50
4. City .....	'55	2,78	2,36	60	60
		60,59	52,45	6,74	6,74
5. Imperial, Limited .....	1862	2,25	2,23	50	50
6. Alliance, „ .....	'62	1,46	1,60	87	84
		64,30	55,68	8,11	8,08
7. Consolidated, Limited .....	1863	2,48	2,45	85	85
8. Central, „ .....	'63	55	57	10	10
9. Metropolitan, „ .....	'63	68	59	21	21
10. London and South- Western, Limited .....	'62	61	57	18	18
		68,62	59,86	9,45	9,42
11. London and County.....	1836	16,11	14,50	1,50	1,50
		84,73	74,36	10,95	10,92

\* The London Joint Stock Bank does not, like all the other banks, separate acceptances from deposits. Hence the 17,790,000l. above must be largely reduced to arrive at the cash deposits. In December, 1867, the acceptances were given at 2,734,000l., but may now be much more.

Taken from the "Economist" (supplement), 16th March, 1872, Commercial History and Review, 1871, p. 62.

The deposits for December, 1872, were about 5 millions more, but I have given the details for the year 1871, as the remainder of my statements could not be brought later than that date.

There are not the same means of giving an exact account of the capitals and holdings of the joint stock banks in the country as in London. The balance sheets of many of the provincial joint stock banks are printed in a supplement to the "Economist" newspaper, and in the "Banker's Magazine." From these sources I have been enabled to acquire a great deal of information. Having availed myself of this, I then obtained from those banks whose accounts were not published in the "Economist" or the "Banker's Magazine" the latest statements issued. Many, however, of the provincial joint stock banks do not publish any accounts at all. In some cases the balance sheets are read over to the shareholders. Others prepare written statements which are exhibited to the shareholders only. Even less information than this is sometimes given. But in almost every instance, the exceptions being so few as to be quite immaterial, I was able to ascertain the amount of capital employed, the reserve funds, and the rate of dividend paid. With this assistance, and taking the published statements of deposits held by other banks, either in the same neighbourhood or in districts similarly circumstanced, as a guide, I was able to estimate, with I believe considerable exactness, the position of the remainder.

In the twenty-two years since Mr. Newmarch wrote, the numbers, and also the holdings, of the provincial banks have greatly extended. In 1851 there were about 900, at the present time there are about 1,620 bank offices in England and Wales, exclusive of London. This includes the head offices, whether private or joint stock, and their branches. Guided by the information previously mentioned, I am of opinion that the amount of deposits and capital held by each banking office may be averaged at not less than 130,000*l.* each. In this estimate I include the amount of country bank notes in circulation, averaging about 5 millions. I also include drafts at short dates and at sight, which, taking the returns made by the several banks for composition on stamp duty as a guide, and making an estimate of the probable amount of drafts issued on penny stamps, I cannot believe to be less than from a million and a-half to two millions at one time. I do not include the bank post bills issued by the Bank of England in this sum.

Taking this estimate as a basis, the recapitulation will be, 1,620 provincial bank offices in England and Wales at 130,000*l.* each, 210 millions in all. I have formed this estimate after very considerable inquiry and reflection; in it are included the capitals of the banks themselves, which are often large; and also the amounts as mentioned above of the notes and short drafts in circulation issued by these banks.

The summary of these results will be:—

	Capital and Deposits of Bankers in England.
Bank of England, total resources.....	(say) 67 millions
London bankers, private and joint stock ...	,, 174 ,,
Provincial ,,,	,, 210 ,,
Total.....	<hr/> 451* ,,

To these sums must be added the proportion of these holdings of the discount houses in London which do not belong to the bankers. These houses are estimated in the Commercial History and Review of the "Economist," as holding about 78 millions at the close of 1871. A considerable portion of this money was doubtless deposited with these houses by bankers in London, the provinces, and elsewhere. This we must exclude, as it has been already reckoned among the deposits held by the bankers. The particulars are as follows:—

TABLE 2.—*London Discount Companies, 1870 and 1871. Progress of Total Means held as Capital, Reserves, and Deposits of the following Three Companies—National Discount Company, 1856; General Credit Company, 1866; and United Discount Company, 1865.*

[000's omitted, thus £2,437, = £2,437,000.]

Description.	31st December, 1871.	31st December, 1870.
I.	£	£
Capital paid-up .....	2,437,	2,437,
Reserves .....	571,	541,
Deposits .....	3,008, 20,587,	2,978, 15,935,
Total means .....	23,595,	18,913,
II.		
Average of three companies.....	7,865,	6,152,
III.		
Estimate of (say) seven more discount concerns } (in all ten) at same average .....	78,650,	61,520,
IV.		
Equal (at an average unexpired date of fifty days of the bills discounted) to a total discount per annum of (say) .....	574,000,	430,000,
V.		
Leaving to fall due at each of the 300 working days (say) .....	1,600,	1,400,

*Note.*—Taken from supplement to "Economist," 1871, Commercial History and Review of 1871, 16th March, 1872, p. 66.

After careful inquiry, I believe that an estimate that three-fifths of this money is deposited by bankers, and two-fifths by other

\* About 40 millions of this amount is with "limited companies," some of which, in the provinces, have retained their note circulation. In respect of such issue they continue subject to unlimited liability under "the Companies Act, 1862," 25 and 26 Vict., cap. 89, sec. 182.

persons, will be as close an approximation as can be arrived at. I do not separately enumerate the deposits of assurance companies referred to by Mr. Newmarch, the amount of which for 105 assurance companies, I am informed, was for the year 1871—

	£
Cash balances, chiefly at bankers .....	2,450,430
Short loans, chiefly deposit accounts, at joint stock banks, discount houses, &c. .....	1,003,443
	<hr/>
	3,453,873

as these sums are already included in the estimate of money in the hands of bankers, or with the discount houses, as not deposited by bankers.

We must now include a new and very important element in London banking, which has sprung up almost entirely since Mr. Newmarch wrote. I mean the Foreign and British Colonial joint stock banks having offices in London. In 1851 there were, as I find by a reference to the banking directories and magazines of that date, only ten of these banks, with paid-up capitals and reserves of about  $5\frac{1}{2}$  millions, and deposits probably not much exceeding 20 millions. There were, in 1872, more than forty-five of such banks, with capitals and reserves of about 30 millions, and deposits and circulations of about 120 millions. Some reference to these banks must be made in any statement of English banking ; it is extremely difficult to estimate the amount of influence which they exert on the English money market, but I shall endeavour to deal with this question further when speaking of deposits held in England. Nor must we, in taking a broad view of the question, lose sight of the large sums held both by the trustee and the post office savings banks. These are stated in the last published number of the "Statistical Abstract" to be as follows :—

*Computed Capital of the Savings Banks under Trustees, 1871.*

	£
England .....	31,496,000
Wales .....	1,066,000
Scotland .....	4,119,000
Ireland .....	2,224,000
	<hr/>
	38,905,000

*Computed Capital of Post Office Savings Banks, 1871.*

	£
England and Wales .....	15,939,000
Scotland .....	341,000
Ireland .....	745,000
	<hr/>
	17,025,000*

\* "Statistical Abstract for the United Kingdom," No. 19, 1872, pp. 102 and 103.

being together about 56 millions. In 1851 the post office savings banks did not exist. The amounts held by the trustee savings banks in that year were 30,277,684*l.*\*

These amounts include almost every thing in the shape of what may be called banking money in England which can be traced. There are, however, doubtless very large sums in the hands of commercial houses and foreign bankers, whose names do not appear in the list of bankers. Of these no estimate which can be of any use can be formed, nor is it needful for the purpose of this inquiry. I have included in my estimate all the houses recognised as bankers in the list in the "Banker's Almanack." It is the invariable custom, I believe, for the commercial houses and foreign bankers mentioned, to have an account with a recognised banker, and hence their deposits, so far as they affect the banking operations of this country, are brought into consideration in the statement given above.

The banks in England, both private and joint stock, remain very similar in constitution now as when described by Mr. Gilbart. In no country that I am acquainted with do they vary so much in size. There are great companies, with capitals and liabilities ranging from 20 to 30 millions. There are small companies, with capitals ranging from 25 to 50 thousands, whose deposits are probably considerably smaller in amount than the sums which the larger concerns annually pay to their shareholders as dividends. Among the private banks, the differences, though less in extent, are probably very considerable.

There are in England and Wales at this date, of private firms carrying on the business of banking:—

In London (say) .....	51
,, the provinces (say) .....	206
,, with about ,,, .....	290 branches
	—
Joint stock banks in London and the } provinces .....	547
	116
With about .....	1,007 branches
	—
	1,670

not including the Bank of England with its eleven branches.

The following table explains the size of the places in which these banks carry on their business. I have followed the best definition that could be obtained of these places either as parliamentary or as municipal boroughs. Where no such boundaries existed, the population of the "civil" parish has been followed. It was impossible to identify, satisfactorily, some six or seven of the smaller places.

\* "Statistical Abstract for the United Kingdom," No. 11, 1864, p. 77.

TABLE 3.—Population of Places in England, according to the Census of 1871, in which there were Bank Offices in 1872.

	Inhabitants (according to Census of 1871).		Inhabitants (according to Census of 1871).
In 16 places with } less than 1,000		In 2 places between 24,000 and 25,000	
„ 93 places between 1,000 and 2,000	„ 12 „	25,000 „	30,000
„ 135 „ 2,000 „ 3,000	„ 11 „	30,000 „	35,000
„ 87 „ 3,000 „ 4,000	„ 6 „	35,000 „	40,000
„ 69 „ 4,000 „ 5,000	„ 10 „	40,000 „	45,000
„ 53 „ 5,000 „ 6,000	„ 10 „	45,000 „	50,000
„ 51 „ 6,000 „ 7,000	„ 5 „	50,000 „	55,000
„ 40 „ 7,000 „ 8,000	„ 3 „	55,000 „	60,000
„ 20 „ 8,000 „ 9,000	„ 3 „	60,000 „	65,000
„ 20 „ 9,000 „ 10,000	„ 3 „	65,000 „	70,000
„ 17 „ 10,000 „ 11,000	„ 1 „	70,000 „	75,000
„ 8 „ 11,000 „ 12,000	„ 2 „	80,000 „	85,000
„ 8 „ 12,000 „ 13,000	„ 4 „	85,000 „	90,000
„ 6 „ 13,000 „ 14,000	„ 1 „	90,000 „	95,000
„ 8 „ 14,000 „ 15,000	„ 2 „	95,000 „	100,000
„ 12 „ 15,000 „ 16,000	„ 6 „	100,000 „	150,000
„ 5 „ 16,000 „ 17,000	„ 2 „	150,000 „	200,000
„ 9 „ 17,000 „ 18,000	„ 1 (a) „	200,000 „	250,000
„ 9 „ 18,000 „ 19,000	„ 1 (b) „	250,000 „	300,000
„ 4 „ 19,000 „ 20,000	„ 1 (c) „	300,000 „	350,000
„ 5 „ 20,000 „ 21,000	„ 1 (d) „	350,000 „	400,000
„ 7 „ 21,000 „ 22,000	„ 1 “the Metropolis” ....	450,000 „	500,000
„ 2 „ 23,000 „ 24,000			3,266,987

In 773 places in all.

Mr. Gilbart gives the corresponding number in 1854 as 567 places.\*

In Birmingham (b) there were in 1872 11 offices = 1 to every 31,200 inhabitants.			
„ Leeds (a) „ 10 „ = 1 „	25,900 „		
„ Liverpool (d) „ 17 „ = 1 „	29,000 „		
„ Manchester (c) „ 21 „ = 1 „	18,000 „		
„ the Metropolis (as defined in } the census report) ..... 167 „ = 1 „	19,500 „		

Compared with the total population of England and Wales there were—

In 1851 .....	1 bank office to about 20,000 inhabitants.
„ '54 .....	16,500 „
„ '72 .....	13,000 „

In preparing the foregoing table I was indebted to the kindness of our president, Dr. Farr, who forwarded me the proof sheets of the summary Table VII of the Census of 1871, giving the popula-

\* Statistical Society's *Journal*, 1854, p. 307.

tion of cities, municipal boroughs, parliamentary boroughs, and other principal towns, &c., in England and Wales. I checked this statement with the list of bank offices in the "Banking Almanack." According to it, in 282 places the population of which is given below, there is no banking office open at the present time. It is probable that many of these places are hamlets adjacent to larger towns possessing banks.

	Inhabitants (according to Census of 1871).
In 60 places between.....	1,000 and 2,000
,, 64     ,, .....	2,000   ,, 3,000
,, 37     ,, .....	3,000   ,, 4,000
,, 36     ,, .....	4,000   ,, 5,000
,, 24     ,, .....	5,000   ,, 6,000
,, 20     ,, .....	6,000   ,, 7,000
,, 12     ,, .....	7,000   ,, 8,000
,, 2      ,, .....	8,000   ,, 9,000
,, 2      ,, .....	9,000   ,, 10,000
,, 3      ,, .....	10,000   ,, 11,000
,, 5      ,, .....	11,000   ,, 12,000
,, 1      ,, .....	12,000   ,, 13,000
,, 4      ,, .....	13,000   ,, 14,000
,, 6      ,, .....	14,000   ,, 15,000
,, 3      ,, .....	16,000   ,, 17,000
,, 1      ,, .....	21,000   ,, 22,000
,, 1      ,, .....	23,000   ,, 24,000
,, 1      ,, .....	25,000   ,, 30,000

282 places in all, without banking offices.

The proportion of the deposits to the capital varies as much almost as the size of the banks themselves. I prefer quoting Mr. Gilbart's well-considered observations on this part of the question, to giving any opinion of my own:—

"It is difficult to state in all cases what proportion a capital "ought to bear to the liabilities of a bank. Perhaps the best "criterion we can have is the rate of dividend, provided that dividend "be paid out of the business profits of the company. When we "hear of a bank paying from 15 to 20 per cent. dividend, we may "be assured that the capital is too small for the business. The "liabilities of the bank, either in notes or deposits, must far exceed "the amount of its capital."

"Although the proportion which the capital of a bank should "bear to its liabilities may vary with different banks, perhaps we "should not go far astray in saying it should never be less than one- "third of its liabilities.\* I would exclude, however, from this com-

\* The proportion in Scotland is now about one-sixth; but in England, or at least in London, the capitals of the joint stock banks bear a much smaller proportion to their liabilities.

“ parison all liabilities except those arising from notes and deposits.  
 “ If the notes and deposits together amount to more than three  
 “ times the amount of the paid-up capital, the bank should call up  
 “ more capital.”—“ Gilbart’s Treatise on Banking,” pp. 153 and 154.

Modern practice has not in all instances adhered to the principles of prudence laid down by Mr. Gilbart.

### III.—*Statement of Banking in Scotland.*

The great assistance rendered by the Banking System of Scotland in developing the prosperity of that country is well known. The stability of that system has been greatly promoted by the following provisions of the law :—

“ 1. There is no limitation to the *number* of partners.

“ 2. The *private fortune* of every partner is answerable for the debts of the bank.

“ 3. *Land*, as well as other property, *may be attached* for debt.

“ 4. In Scotland, *all land is registered*; so it is easy for any individual, by referring to the records, to ascertain what landed property is possessed by the partners of the bank, and also whether or not it be mortgaged. The following is the language of the Report of the Committee of the House of Commons, appointed in 1826 to consider the expediency of abolishing all notes under 5*l.*:—

“ There is no limitation upon the number of partners of which a banking company may consist; and, excepting in the case of the Bank of Scotland, and the two chartered banks, which have very considerable capitals, the partners of all banking companies are bound jointly and severally, so that each partner is liable to the whole extent of his fortune for the whole debts of the company.

“ A creditor in Scotland is empowered to attach the real and portable, as well as the personal estate of his debtor, for payment of personal debts, among which may be classed debts due by bills and promissory notes; and recourse may be had for the procuring payment to each description of property at the same time. Execution is not confined to the real property of a debtor merely during his life, but proceeds with equal effect upon that property after his decease.

“ The law relating to the establishment of records gives ready means of procuring information with respect to the real and heritable estate of which any person in Scotland may be possessed. No purchase of an estate in that country is secure until the *seisine* (that is, the instrument certifying that actual delivery has been given) is put on record; nor is any mortgage effectual until the deed is in like manner recorded.

“ In the case of conflicting pecuniary claims upon real property,

" the preference is not regulated by the date of the transaction, but " by the date of its record. These records are accessible to all " persons ; and thus the public can with ease ascertain the effective " means which a banking company possesses of discharging its " obligations, and the partners in that company are enabled to " determine with tolerable accuracy the degree of risk and respon- " sibility to which the private property of each is exposed.

" There are other provisions of the law of Scotland which it is " not necessary minutely to detail, the general tendency of which is " the same with those above mentioned."\*

I have referred to these points, because in some of them there is a difference between the practice in England and in Scotland.

The Scotch Banks are few in number, but with numerous branches, ramifying down to very small places. Great facilities are thus afforded to the public, even in the most remote districts.

There were stated to be, in the " Banker's Almanack" for 1873—

1 bank with .....	18	branches.
1      "	33	"
1      "	39	"
1      "	61	"
1      "	75	"
1      "	75	"
1      "	83	"
1      "	93	"
1      "	94	"
1      "	112	"
1      "	118	"
—	—	
11     "	801	"
—	—	

The corresponding number was given in 1872 as—

11 banks with ..... 779 branches.

So considerable was the extension of banking in Scotland in that one year.

From the small number of head offices, and the fact that most of these are situated in Edinburgh, it has been easy for the banks to form arrangements among themselves for the regulation of their business. A bank of doubtful solvency would find it difficult to carry on its operations among them.

Hence a check can be given to undue speculation if it arises, and the abuses connected with rediscount by means of fictitious bills effectually prevented. And a uniformity of practice in the conduct of the business has been obtained throughout the whole of Scotland. Hence also the existing banks have always at their command a number of well-trained and long-tried officers, accustomed to a sound and carefully arranged method of business, who

\* "Gilbart's Practical Treatise on Banking," pp. 503 and 504.

may be depended on to carry out the instructions of the principal managers of the bank at the most distant stations. Those who have any practical experience, and who therefore understand how much the good success of a banking business depends on the conduct of its officers, will know how to appreciate the value of the advantage but imperfectly described in these few words.

The banks are, without exception, banks of issue. The advantage thus obtained enables them to conduct their business more economically, to the benefit both of their customers and of their shareholders.

The banks have almost without exception large capitals. On these they scarcely pay high dividends, according to the English standard. The dividends on the stock in banks of Scotland range from 8 to  $14\frac{1}{2}$  per cent. The eleven banks in 1872 distributed to their proprietors as dividends 1,099,000*l.* To ascertain how far this came from profits of banking, it is necessary to deduct the interest on paid-up capital, and other funds belonging to the banks. These, as shown by their published balance sheets, amounted to 12,497,000*l.*, and if the interest be taken at 5 per cent., as is usual in commercial business, the amount to be thus deducted is 624,000*l.*, leaving 475,000*l.* to represent the net profits derived by the banks from being the custodiers of 82,500,000*l.* belonging to the public, or at the rate of eleven shillings and sixpence per cent. per annum on that amount. It may be added that this is the largest aggregate amount of dividend ever distributed by the Scotch banks.\* Altogether a sobriety in the conduct of the business has been encouraged, to the great and abiding advantage of the country. The business carried on by any weak bank has been quickly absorbed, and transferred to more powerful institutions. A system affording a very high degree of security to the public, and capable of adapting itself to the changing circumstances of the country, has thus been gradually established.

The process of transformation has gone steadily on for many years past. In 1819, there were in Scotland thirty-six district banking companies, and in 1844 no fewer than twenty-eight of these had disappeared. Within that period sixteen new banks were established, so that when the Bank Acts came into force there were twenty-four banks in active operation. These Acts prohibited the formation of new banks of issue, and thus a virtual monopoly was conferred on the twenty-four existing banks; but notwithstanding the advantage thus presumably arising, the number continued to dwindle, till now it is reduced to eleven. The particulars, which are curious, are as follows:—\*

\* From a Pamphlet on "The Rate of Discount and the Bank Acts." Glasgow, 1873.

*Banks in Scotland in 1819.*

Bank of Scotland	*Sir W. Forbes and Company	British Linen Company
Commercial Banking Company	*R. Allan and Son	*Ramsays, Bonar, and Company
*Thos. Kinnear and Sons	*John Wardrop and Company	*D. Smith and Company
*A. Allan and Company	*Aberdeen Commercial Bank	*Jas. Inglis and Company
Aberdeen Bank	*Dunbar Bank	*Ayr Bank
*Berwick Bank	Dundee Union Bank	Dundee Banking Company
*Dundee New Bank	*Galloway Bank	*Falkirk Bank
*Fifeshire Bank	*Glasgow Ship Bank	*Greenock Bank
*Glasgow Bank	*Leith Bank	*Glasgow Thistle Bank
*Kilmarnock Bank	*Paisley Union Bank	*Montrose Bank
*Paisley Bank	*Renfrewshire Bank	Perth Bank
*Perth Union Bank		*Stirling Bank
Royal Bank of Scotland		
	Total.....	36
	*Disappeared by 1844 .....	28
		—
	Remain .....	8
New before 1844 .....		16
		—
Existing in 1844 .....		24
		—

*Banks in Scotland in 1844.*

§Bank of Scotland	†§National Bank of Scotland	†§Union Bank of Scotland
§Commercial Bank of Scotland	†Eastern Bank of Scotland	†Western Bank of Scotland
†Edinburgh and Leith Bank	Aberdeen Bank	†§Aberdeen Town and County Bank
†§Clydesdale Banking Company	†Ayrshire Banking Company	†§Caledonian Bank
†Arbroath Bank	†§City of Glasgow Bank	Dundee Banking Company
†Central Bank	Dundee Union Bank	†Glasgow Joint Stock Banking Company
†Greenock Union Bank	†§North of Scotland Bank	†Paisley Commercial Bank
Perth Banking Company	§British Linen Company	
§Royal Bank of Scotland		

† Established in or subsequent to 1819.

§ Existing in 1873—11 in number.

A special point in the banking arrangements deserves notice.

The system of making advances on "cash credits," that is, on the personal security of two bondsmen, as practised in Scotland, tends to encourage the natural thriftiness of the people.

The young man starting in life with but small capital, knows that he can only obtain the needful assistance to carry his business on through the help of a banker. This assistance will not be granted except through the mediation of his sureties, and unless his character stands well for industry and dependability, he is not likely to find friends willing to risk their property in backing him. Besides this, the sureties are entitled to inspect the state of the account which they guarantee, and to ascertain for themselves whether it is con-

ducted in a satisfactory manner. Bankers are bound by the first principles of their business not to disclose the state of a customer's account to an unauthorised person. The sureties are, however, entitled, for their own security and protection, to this information, as regards the accounts which they guarantee. It is easy to see how advantageous to the prosperity of a country it must be, that the young traders should be thus taught that without a reputation for honesty they will be seriously hampered in their first starting in life. Meanwhile the banks, from being few in number, with their head offices principally in one place, possess great facilities for ascertaining whether the guarantors have given their names as sureties for larger sums, or to more persons than their means would justify, and in other respects stand to a very great advantage for ascertaining whether the business of the country generally, is in a healthy condition or not.

The large number of branches must, however, be a cause of great expense, and in several other respects it is obvious that a business carried on in such thinly peopled districts as are found in many parts of Scotland, must be conducted to a disadvantage in comparison with those banks which deal with more active centres of commerce. Although the profit derived from their large issues of notes may be considerable, yet, when we consider the many expenses incurred in conducting a large note circulation, the cost of printing, stamp duty, and the charges on importing gold from London when the circulation exceeds the limit fixed by the Act of 1845, no small deductions must be made from the apparent profit to be derived from this head.

On the other hand, the great number of branches possessed by the Scotch banks tends beyond doubt to their stability and prosperity. It is hardly likely that the whole of a large country, with an energetic population, carrying on different industries in different districts, will suffer from want of prosperity over its entire extent at the same time. If one portion is depressed it is likely that another will be prosperous. Hence a deficiency of deposits in one district will probably be compensated by an increase in another. Hence also in ordinary times the deposits which cannot be profitably employed in one portion of the country occupied by the branches of a large bank, will be eagerly sought for by the customers in another town served by the same system. Some districts too poor to support banks of their own, may yet form very desirable fields for the employment of the capital which cannot find occupation in another county. The network of banks on the surface of Scotland is as important to the development of the prosperity of the country as the network of the railways. It has caused a great economy of capital, as the universal practice of people, even of the most moderate means, is to lodge their money with the banks.

The history of the growth of Scotch banking during the present century, as far as I can trace it, is as follows:—

TABLE 4.—*Growth of Scotch Banking during the Present Century.*

Date.	Deposits (Millions).	Number of Offices.	Inhabitants.
1826*	21	167 = 1 to every 13,170	
'41†	27	380 = 1 „ 6,600	
'47‡	30	—	—
'51§	36	—	—
'56	63 and capital	585 = 1 „ 5,230	
'72.....	92 including all liabilities and capital	790 = 1 „ 4,250	

\* In Tooke's "History of Prices," vol. iv, p. 237.

† Estimate given by Mr. Blair in evidence before the Committee on "Banks of Issue," quoted by Mr. Gilbart, Statistical Society's *Journal*, 1856, p. 146.

‡ "Economist," 8th May, 1847.

§ Mr. Newmarch, Statistical Society's *Journal*, 1851, p. 169.

|| Letter of Mr. Blair, of the Bank of Scotland, to Sir G. C. Lewis, "Appendix, Select Committee on the Bank Acts," p. 328. As the increase given since 1847 may seem disproportionate, it may be as well to quote the statement of Mr. Mackenzie, manager of the Commercial Bank of Scotland in 1856, "that there never was a period in which Scotland has made such rapid progress in improvement and material prosperity as during the twelve years since 1844."

— "Appendix, Select Committee on the Bank Acts," 1857, p. 330.

There were bank offices in Scotland in 1872, in 283 places, besides a few small ones which could not be satisfactorily identified. The population is shown in the following table:—

TABLE 5.—*Population of Places in Scotland, according to Census of 1871, in which there were Bank Offices in 1872.*

In 61 places with } less than.... }	Inhabitants (according to Census of 1871).	In 1 place between 13,000 and 14,000	Inhabitants (according to Census of 1871).
„ 70 places between } less than.... }	1,000	„ 4 „ 14,000 „ 15,000	
„ 35 „	1,000 and 2,000	„ 3 „ 15,000 „ 16,000	
„ 33 „	2,000 „ 3,000	„ 1 „ 17,000 „ 18,000	
„ 19 „	3,000 „ 4,000	„ 2 „ 19,000 „ 20,000	
„ 10 „	4,000 „ 5,000	„ 1 „ 22,000 „ 23,000	
„ 9 „	5,000 „ 6,000	„ 1 „ 25,000 „ 26,000	
„ 7 „	6,000 „ 7,000	„ 2 „ 40,000 „ 50,000	
„ 8 „	7,000 „ 8,000	„ 1 „ 50,000 „ 60,000	
„ 5 „	8,000 „ 9,000	„ 1 „ 80,000 „ 90,000	
„ 1 „	9,000 „ 10,000	„ 1 place of..... 118,000 (a)	
„ 4 „	10,000 „ 11,000	„ 1 „ 196,000 (b)	
„ 1 „	11,000 „ 12,000	„ 1 „ 477,000 (c)	
	12,000 „ 13,000	—	
			In 283 places in all.

Inhabitants.

In Dundee (a) there were in 1872.... 13 offices = 1 to every 9,700  
 „ Edinburgh (b) „ ..... 35 „ = 1 „ 5,600  
 „ Glasgow (c) „ ..... 70 „ = 1 „ 6,800

It will be observed that more than half these places have less than 3,000 inhabitants. This contrasts curiously with the state of matters in England, and enables us to understand how completely the benefits of a good system of banking extends to the most remote villages of Scotland. This superiority of arrangement has existed for a very long while. I find the following remark in the "Circular" "to Bankers," 11th October, 1833:—"In London there is not "more than one bank to every 30,000 people. In Edinburgh there "is a bank for every 9,000, and within three miles from the centre "of Edinburgh, that is to say, at Leith, there are other banks "carrying on extensive business."

The influence of the Act of 1845, under which the note circulation is regulated, has been different in Scotland from England. It may have had some effect, from limiting the privilege of issue to the banks then existing, in preventing the formation of new banks, and hence in repressing any excessive competition among the banks themselves, which might have led them to encourage wild and hazardous speculations. But the very small margin of profit made by the existing banks renders it scarcely probable that any new bank could, at the present time, commence a business in Scotland with any considerable prospect of success. The fact that no new banks have been started since 1844, is probably due to this cause rather than to any other. It is of course possible that in some period of speculative activity new banking companies may be formed in Scotland, but considering how completely the existing system covers the ground there appears scarcely room for any new competitor. Experience both in England and in Ireland, in which latter country the position of banking is very similar to that of Scotland, shows that the possession of the power of issuing notes cannot be considered essential to the success of a bank.

I annex a table giving a statement of the position of the Scotch banks at the most recent date I could obtain. According to information with which Mr. Gairdner, of the Union Bank of Scotland, Glasgow, has kindly supplied me, the deposits increased in the course of 1872 to an amount of about two millions and a-half more than the sums stated in the table. Scotland is the only part of the United Kingdom for which a complete banking balance sheet can be given. It is much to be desired that all the accounts published by banks should be made out on a uniform plan. Those of Scotland, though not absolutely uniform, contrast very favourably in this respect with the majority of those published in England. It will be observed that the capitals belonging to the banks, as well as the amounts of cash reserves and Government securities, bear a very high proportion to the liabilities.

BLE 6.—Position of Banks in Scotland. LIABILITIES. Cols. 1 and 2 give the Capitals and Reserve Funds of the Scotch Banks; the Aggregate of these will be found in Col. 3, to which may be added Undivided Profits, Col. 9. Cols. 4, 5, 6, and 7 give the Liabilities of the Banks to the Public: the Aggregate of these will be found in Col. 8.

[000's omitted, thus £1,000, = £1,000,000.]

Banks.	1 Paid-up Capital.	2 Reserve Fund.	3 Total of Columns 1 and 2.	4 Note Circula- tion.	5 Drafts at Short Dates.	6 Accep- tances.	7 Deposits	8 Total of Columns 4, 5, 6, and 7.	9 Un- divided Profits.	10 General Total.
Bank of Scotland, 29th February, 1872 .....	£ 1,000,	£ 300,	£ 1,300,	£ 697,	£ 149,	£ 1,532,	£ 8,584,	£ 10,962,	£ 84,	£ 12,346,
Royal, 22nd Sep- tember, 1871 }	2,000,	400,	2,400,	742,	266,	256,	8,659,	9,923,	128,	12,451,
British Linen Company, 15th April, 1872 ....	1,000,	349,	1,349,	518,	249,	296,	7,452,	8,515,	89,	9,953,
Commercial, 31st October, 1871 }	1,000,	370,	1,370,	754,	—	439,	7,992,	9,185,	85,	10,640,
National, 1st No- vember, 1871 }	1,000,	335,	1,335,	672,	—	1,036,	8,905,	10,614,	171,	12,120,
Union, 2nd April, 1872 .....	1,000,	307,	1,307,	884,	115,	*401,	8,532,	9,933,	150,	11,389,
Clydesdale Bank- ing Company, 31st Decem- ber, 1871 .....	900,	290,	1,190,	506,	†250,	254,	5,671,	6,681,	130,	8,002,
City of Glasgow, 5th June, 1872 }	870,	270,	1,140,	‡681,	118,	780,	6,613,	8,193,	119,	9,452,
Caledonian Bank- ing Company, 29th June, 1872 }	125,	54,	179,	92,	—	—	892,	984,	28,	1,190,
North of Scotland Banking Com- pany, 30th Sep- tember, 1871 }	320,	55,	375,	316,	—	—	1,981,	2,296,	23,	2,695,
Aberdeen Town and County Banking Com- pany, 31st Jan- uary, 1872 ....	182,	27,	209,	175,	—	—	1,548,	1,723,	23,	1,956,
	9,397,	2,757,	12,154,	6,038,	1,148,	4,996,	66,828,	79,010,	1,030,	92,194,

\* Including balances due to banking correspondents.

† „ letters of credit *in transitu* and balances due to bank correspondents.

‡ „ circulation in the Isle of Man.

TABLE 6.—Position of Banks in Scotland—Contd. ASSETS. Cols. 1, 2, and 3 give the Cash Reserves of the Scotch Banks; the Aggregate of these will be found in Col. 8.

[000's omitted, thus £509, = £509,000.]

Banks.	1 Gold and Silver Coin, and Notes of other Banks.	2 Government Securities, Cash with London Bankers, and Short Loans in London, &c.	3 Indian Govern- ment and other Stocks and Invest- ments.	4 Liabilities of Customers for Accept- ances.	5 Bank Pre- mises.	6 Bills Dis- counted and other Advances.	7 Ad- vanced on Credit and Cash Ac- counts.	8 Total of Columbus 1, 2, and 3.	9 General Total.
1. Bank of Scotland	£ 509,	2,879,	174,	1,532,	194,	7,057,	—	3,563,	12,346,
2. Royal Bank of } Scotland .....	863,	2,063,	778,	—	133,	8,615,	—	3,703,	12,451,
3. British Linen } Company .....	346,	*1,912,	445,	—	124,	4,813,	2,313,	2,703,	9,953,
4. Commercial } Bank of Scot- land .....	694,	1,780,	651,	—	130,	7,385,	—	3,125,	10,640,
5. National Bank } of Scotland ....	694,	2,922,	575,	—	129,	7,800,	—	4,191,	12,120,
6. Union Bank of } Scotland .....	739,	1,876,	417,	—	160,	8,198,	—	3,032,	11,389,
7. Clydesdale Bank- } ing Company	†808,	1,384,	—	—	141,	4,405,	1,263,	2,193,	8,002,
8. City of Glasgow ....	955,	1,658,	—	—	‡215,	6,624,	—	2,613,	9,452,
9. Caledonian Bank- } ing Company	§127,	292,	—	—	25,	747,	--	419,	1,190,
10. North of Scotland } Banking Com- pany .....	304,	463,	55,	—	24,	1,848,	—	822,	2,695,
11. Aberdeen Town } and County } Banking Com- pany .....	202,	376,	—	—	37,	1,341,	—	578,	1,956,
	6,241,	17,605,	3,095,	1,532,	1,312,	58,833,	3,576,	26,940,	92,194,

\* Including Bank of England stock.

† „ cash balances with London and country bankers.

‡ „ advances on heritable property.

§ „ balances due by banking correspondents.

|| „ balances due by other banks.

The clauses in the Act of 1845 requiring gold and silver to be held against any notes in circulation in excess of the limit then fixed cannot be considered as desirable now. No provision was made in that Act for the growing wants of a population, extending surely though slowly in number and wealth. No provision was made in it either, for additional requirements which any extended rise in the prices of commodities would surely demand. Since 1845 all these disturbing influences have been at work. Surely though slowly the note circulation has extended itself (see Table 15), though trammeled in such a manner that the extension is now no advantage either to the customers of the banks, or to the banks themselves, or in fact to any one. When the vast deposits of the Scotch banks are taken into consideration, as well as the small proportion which the note circulation bears to those far larger liabilities; when it is also borne in mind that the gold and silver required to be held by the Scotch banks against the excess of their circulation is not specially appropriated for the maintenance of the circulation at all: I mean that, in the very improbable case of any Scotch bank stopping payment, no holder of a note could claim to receive the value of it out of the specie held; that in point of fact no greater certainty of the convertability of the note is gained, while the disadvantage to the Scotch banks and to their customers, and, far more, to the British public generally, is patent and obvious, it is impossible to resist a conviction that some modification of the stringency of the Act on this point is desirable. This might be effected by an extension of the time over which the average of the circulation is taken, so as to allow the periodic increase in it to subside before the average is struck,\* or by enacting that the holding exchequer bills for the amount of the excess should be considered sufficient security, or that balances in the Bank of England should be regarded as a part of the basis on which the circulation is issued. In Sweden, as will be found mentioned in section 26 of the Swedish *Banking Law*, the balances of the banks in the Ricksbank are included with the cash in hand, and other securities, for the purpose of a basis for the note circulation. A similar provision in this case would meet the difficulty without giving the Scotch banks the expense of bringing sovereigns to Edinburgh, and also would tend to modify the sharp rises in the rate of discount in London, which seem certainly attributable at times to the Scotch demand for gold arising from this cause, taken in conjunction with that for Ireland. In the years 1845-72 inclusive, the issues of the Scotch banks have averaged more than a million annually, and in the last three years considerably more than

\* This plan was suggested by the Royal Bank of Scotland in 1856. See "Appendix to Report from the Select Committee on the Bank Acts, 1857," p. 330.

two millions, over their limits. The prudence with which their business has been conducted might have induced them to hold an extra stock of specie in proportion to the extension of their paper, had the Act of 1845 not existed. It is however the stringency of the requirements of the Act in this respect which has influenced the periodic drains of specie from London, so ably commented on by Professor Jevons in vol. xxix of the Society's *Journal*.

#### IV.—*Comparison of Statistics of Bankruptcy in England and Scotland.*

It does not seem improbable, considering the very respectable dividends paid by the Scotch banks on their large capitals, that they may in ordinary years make fewer losses by bad debts than the English banks. The amounts lost under this head will never be known till our bankers are directed to make some return similar to that made in Sweden of the amounts outstanding in their books due from customers who have suspended payment or failed,\* but without dependable statistics it is impossible to do more than make a conjecture.

I am able, however, to give a comparative statement which, though it may not be sufficient to enable us to arrive at an exact conclusion, nevertheless shows that the subject deserves thorough attention. In 1867 Mr. William John Bovill read before this Society a very careful paper on the statistics of civil procedure in English courts of law. Though that paper is so recent, and is probably in the hands of most, if not all, of the present Fellows of this Society, I shall make an extract from it here, in order that we may have the advantage of comparing it with a statement with which Mr. George Auldjo Esson, Accountant of Bankruptcy in Scotland, has been so good as to supply me.

#### *Particulars respecting Proceedings in the Court of Bankruptcy in England.*

“ The proceedings in the Court of Bankruptcy possess para-  
“ mount general interest, as a direct index of the prosperous or  
“ adverse circumstances of the community ; but they also possess a  
“ peculiar interest, which attaches to a tribunal constituted, not for  
“ the determination of rights between litigating parties (though  
“ these are dealt with when they accidentally arise), but primarily  
“ and almost exclusively for the collection of the assets of bankrupts,  
“ and division of them among their creditors ; and it is an interesting  
“ and important question, how far these objects are attained.

\* See Quarterly Statement of Swedish “Enskilda” Banks, Table 20, column 25.

" The number of adjudications for the year 1865 were—

On petition of a creditor .....	769
,,      the debtor .....	5,937
By registrars at the prisons .....	1,091
On petitions in <i>formā pauperis</i> .....	500
,, judgment-debtor summons .....	8
	—
	8,305

" The total number shows an increase of 981, or 13·3 per cent., as compared with the total for 1864, but is less by 165 than the number in 1863: the increase in 1865 above the number in the preceding year extends to each form of procedure, except judgment-debtor summonses. In the number of adjudications on petition of a creditor, it amounts to 174, or 29·2 per cent.; on petition of the debtor, to 677, or 12·8 per cent.; in the number by registrars at the prisons, to 187, or 20·6 per cent.; in the number on petitions in *formā pauperis*, to 44, or 9·6 per cent. In 1864 there were nine adjudications on judgment-debtor summonses. It extends also to each of the courts, amounting for the London court to 742, or 32·1 per cent.; for the county district courts, to 155, or 10 per cent.; and for the county courts, to 184, or 5·4 per cent.

" One cannot but be struck at the large proportion, 5,975, or nearly two-thirds of the whole of those adjudications, being at the instance of the debtors themselves, a circumstance tending strongly to the conclusion, which appears to be borne out by the other returns in relation to the subject, that far too easy an opportunity of escape from obligations is afforded by fraudulent and collusive resort to the court of bankruptcy.

" The number of adjudications in 1865 in which—

The debts of the bankrupt exceeded 300l., was.....	3,733
Where they did not exceed 300l. ....	4,572

" the former being 44·9 per cent., the latter 55·1 per cent., of the whole.

" The total amount of the debts due from the estates of the bankrupts does not appear in the return. This would have been an item of interest for comparison with the following table of the total amount of the *gross* produce realised from the estates of bankrupts in the year 1865:—

	£
Amount realised by creditors' assignees .....	524,487
,,      official .....	332,468
Total .....	<u>856,955</u>

“ And with the number of cases in which a dividend was made, “ and in which there was no dividend, which are as follows:—

Number of cases in which a dividend was made.....	1,639
In which there was no dividend .....	5,727

“ The cases in which there was no dividend being 72 per cent., “ or nearly two-thirds of the whole. And with the following table, “ showing the rates in the pound at which dividends were made, “ and of the proportion per cent. of the number at each rate to the “ whole:—

Cases in which the Dividend was	Number.	Rate per Cent. to the Whole.
Under 2s. 6d. in the £ .....	861	52·5
2s. 6d. and under 5s.....	381	23·3
5s. -d.     ,     7s. 6d. ....	200	12·2
7s. 6d.     ,     10s. ....	85	5·2
10s. -d.     ,     15s. ....	62	3·8
15s. -d.     ,     20s. ....	15	0·9
20s.....	35	2·1

“ Showing that in 1,442 cases, or nearly nine-tenths of the whole, “ the dividends were under 7s. 6d. in the pound.

“ The number of discharges granted, suspended or refused, are “ as under:—

Granted .....	6,076
Suspended.....	403
Refused .....	107

“ The totals are, respectively, to the number of adjudications “ made during the year, in the proportions of 73·2, 4·8, and 1·3 per “ cent., 20·7 per cent. of the number of adjudications remaining. “ In the preceding year the discharges granted, suspended, and “ refused, were respectively in the proportions of 73·8, 4·3, and 0·1 “ per cent. to the total number of adjudications; in 1862, 62·6, 5·41, “ and 1·6—a further instance of the facility of escape from liability “ afforded by the Court of Bankruptcy.

“ Is it surprising that dissatisfaction exists in the mercantile “ community at such results as these? It may well be expected “ that under such circumstances resort should be had, at the instance “ of creditors as well as debtors, to other modes of winding-up “ insolvent estates; and accordingly we find that, in the year 1865, “ the total number of trust-deeds registered under the provisions of “ the Bankruptcy Act, 1861, was 5,204, being an increase of 1,600, “ or 44 per cent., on the number of the preceding year. Of these, “ 2,733 were deeds of assignment, 2,344 deeds of composition, and “ 127 deeds of inspectorship. The great value of the estates and

" effects affected by these deeds was 9,035,700*l.*, showing an increase " of 5,233,700*l.*, or 137 per cent. on the preceding year."\*

It is instructive to compare this statement with the corresponding position of affairs in Scotland.

*Particulars of Sequestrations in Scotland.*

" Statement showing the manner in which the sequestrations " awarded during the eight years (from 1856 to 1864) have been " disposed of:—

" I. It appears that the—

Total number of sequestrations awarded during this period }	4,038
has been .....	

" Whereof—

Wound-up under composition contracts (between $\frac{1}{3}$ rd and $\frac{1}{4}$ th of the whole) .....	1,197
---	-------

Wound-up by division of the funds by the trustees (about $\frac{1}{4}$ th of the whole) .....	1,021
---	-------

Wound-up under deeds of arrangement ( $\frac{1}{50}$ th of the whole) .....	70
---	----

2,288

Number recalled, and cases in which the sequestrations have been closed without composition or division, there being no assets (about $\frac{1}{50}$ th of the whole) .....	130
---	-----

2,418

Remaining, depending processes, at 31st October, 1864 (more than $\frac{1}{3}$ rd of the whole) .....	1,620
---	-------

" II. This information, classified according to the different years, " shows the annual working of the system:—

	Number of Sequestra- tions Awarded.	Wound-up by Composi- tion.	Wound-up by Division.	Wound-up by Deed of Arrange- ment.	Recalled or Closed without Division, no Assets.
First year of operation of new Act, 1856-57.....	432	97	2	5	2
Second year, '57-'58.....	636	189	23	11	15
Third " '58-'59.....	461	141	130	19	14
Fourth " '59-'60.....	443	150	133	2	14
Fifth " '60-'61.....	525	144	179	12	27
Sixth " '61-'62.....	572	186	133	12	19
Seventh " '62-'63.....	472	148	193	4	12
Eighth " '63-'64.....	497	142	228	5	27
Total .....	4,038	1,197	1,021	70	130
Yearly average.....	505	150	127	9	16

\* From Mr. W. J. Bovill's " Statistics of Civil Procedure in English Courts of Law."—*Journal of the Statistical Society*, vol. xxx, p. 440.

" Note (1). It will be observed from the above tables that the number of  
" sequestrations which have been wound-up under composition contracts during  
" the whole period from 1856 to 1864 exceeds the number wound-up by division of  
" the funds during the same period. In order, however, to ascertain the true pro-  
" portion which subsists between the number of sequestrations wound-up by these  
" two methods, it is necessary to leave out of the reckoning the statistics of some  
" of the earlier years, during which the composition cases obtain an undue prepon-  
" derance, owing to that form of settlement occurring usually at a much earlier  
" period in a sequestration than a winding-up by division can possibly take place.  
" In this view, the figures of the last four years may be taken as giving the truest  
" approximation to the fact, as to the relative numbers of sequestrations wound-up  
" by the different methods. The following is the result of taking the average of  
" these four years :—

Wound-up by composition (rather <i>less</i> than a third of the average yearly number of sequestrations) .....	} 155
Wound-up by division of funds by the trustee (rather <i>more</i> than a third of the average yearly number of seques- trations).....	} 183
Wound-up by deeds of arrangement.....	8
Recalls and cases of no assets.....	21

" This result differs considerably from the yearly average obtained in Table II  
" above.

"(2). The number of discharges of bankrupts, without composition, granted during this period, is 593."

" III. Results of the winding-up as regards the unsecured  
" creditors where the sequestrations were closed by composition  
" contracts, or where the assets were recovered and divided by the  
" trustees during the eight years from 1856 to 1864:—

## **“ 1. Winding-up by composition contracts:-**

There were, as before, during the period, 1,197 sequestrations so wound-up .....	1,197
In 48 of these the rate of the composition has not been returned .....	48
Remains.....	1,149

" Of these, the debtors settled with the unsecured creditors—

For compositions of, and under 2s. per £, say	$36\frac{7}{8}$	per cent.	....	423
,,    above 2s. and under 3s. 4d.	,,	$21\frac{3}{8}$	,,	245
,,    ,,    3s. 4d.	,,	$6s. 8d.$	,,	$24\frac{5}{8}$
			<hr/>	<hr/>
		$82\frac{7}{8}$	,,	951
,,    ,,    6s. 8d.	,,	$10s. -d.$	,,	$10\frac{1}{8}$
,,    ,,    10s. -d.	,,	$15s. -d.$	,,	$5\frac{7}{8}$
,,    ,,    15s. -d.	—	—	,,	$1\frac{1}{8}$
			<hr/>	<hr/>
		100	as above	1,149
		<hr/>	<hr/>	<hr/>

## **“ 2. Wound-up by division of funds :—**

" The number of sequestrations so wound-up during this period  
" have been 1,021.

" The average period during which these 1,021 secessions  
" were in dependence was 1.877 years, or rather less than two  
" years.

"The unsecured creditors drew in dividends under these seques-  
"trations:—

Of and under 2s. per pound of their debts (say 34½ per cent.)	....	350
Above 2s. -d. and under 3s. 4d.	17	174
"    3s. 4d.	6s. 8d.	26
		—
		77½
"    6s. 8d.	10s. -d.	12½
"    10s. -d.	15s. -d.	6½
"    15s. -d.	—	4
		—
	100	1,021

" The average rate of dividend per pound paid to the unsecured creditors during these years has been as follows:—

First year	1856-57 (only)	2 estates wound up, average of no value.
Second „	'57-'58	23
Third „	'58-'59	130
Fourth „	'59-'60	133
Fifth „	'60-'61	179
Sixth „	'61-'62	133
Seventh „	'62-'63	193
Eighth „	'63-'64	228
<hr/>		
1,021"		*

The number of bankruptcies in Scotland for subsequent years were as follows:—†

1868	606
'69	589
'70	555
'71	490

Comparing the 8,305 adjudications stated by Mr. Bovill to have taken place during the year 1865 with the population of England and Wales in 1861, there is one adjudication to every 2,400 inhabitants; if the 5,204 trust deeds are added, the proportion of adjudication and trust deeds combined is one to about every 1,500 inhabitants, while in Scotland the average of 505 sequestrations given by Mr. Esson is only one to about every 6,000 inhabitants. Without going further into detail than can be done in this place, it is not possible to make a complete analysis of the position of affairs in either country, with regard to these points. It is very desirable that official "Reports on Judicial Statistics" should be published by authority for England. The series for Scotland referred to above, is of very great value. Such records, when published for a considerable number of years consecutively, become of the highest service, by

\* From "Notes of Scotch Bankruptcy Law Practice," by George Auldjo Esson, Esq., Accountant in Bankruptcy in Scotland, 1866, pp. 94 and 95.

<sup>†</sup> From Reports on "Judicial Statistics of Scotland."

giving, in a clear and intelligible form, a statement of facts possessing a considerable influence on the social condition of the country. Enough, however, has been stated to show that the subject deserves the close attention of those interested in business pursuits. A low standard of commercial morality is a great evil in itself; a great hindrance also to the material prosperity of any country.

#### V.—*Statement of Banking in Ireland.*

The banking system of Ireland bears a very great resemblance to that of Scotland. As in that country, there is a very considerable circulation of small notes, which have been found to facilitate the progress of business very greatly. In 1826 an Act of Parliament was passed to abolish notes under 5*l.* after a certain time in England. When it was proposed to extend this Act to Scotland and Ireland, the objections made to the measure were so strong that the Government forebore to press it. In 1845 also similar opinions in favour of the existing paper currency were expressed: and though Sir R. Peel succeeded in fixing a limit to the circulation, yet he was prevailed on to permit an extension beyond that limit, under conditions very similar to those arranged for Scotland. The average amount of notes which had been in circulation during the year ending 1st May, 1845 (6,354,498*l.*) was to be the authorised issue. For any amount beyond its authorised issue, each bank was required to hold an equal sum in gold or silver coin, the silver not to exceed one-fourth of the whole. These arrangements remain in force to the present time. But they provide only a partial security.

The same objections apply to these provisions in the case of Ireland as in that of Scotland. Little advantage is gained from them by any person, while inconvenience and loss are inflicted on a good many. Scarcely any security is really provided for the holder of any Irish note by the additional stock of coin which may be held by any bank. It is impossible to distinguish the notes which are in excess of the fixed limit, and to say these notes were issued against gold, and therefore in case the bank which issued them stops payment, the holder may claim gold for them. In the most unlikely event of the stoppage of any of the existing Irish issuing banks, the gold and silver coin held by it would form part of its general assets, and the note-holder would undoubtedly possess no preference over the general creditor. Meanwhile the periodic export of gold to Ireland, intended to cover the note issue in excess of the authorised limit, presses frequently in conjunction with that for Scotland with great severity on the London market. As I have to recur to this subject when speaking of the note currency of the United Kingdom, I shall not dwell further on it here, except to mention that, besides the loss of interest on the gold lying idle in the vaults of the Irish banks, the whole expenses of carriage, insurance against sea risk, &c., are so much

loss to the Irish banks, and are charges which have either in some sense or other to be defrayed by their customers, or are so much loss to their shareholders.

The arrangement of the existing Irish banks is very similar to those of Scotland; a few large banks with head offices, principally in Dublin, and branches ramifying over the provinces, carry on nearly the whole business of the country. There were in 1872 nine joint-stock banks in Ireland:

9 banks with	
305 branches, and	
48 sub-branches, open on fair and market days.	
<hr/>	
362	
3 private banks (all in Dublin)	
<hr/>	
* 365 in all; or 1 to every 14,800 inhabitants.	

Mr. Newmarch gives the corresponding number in 1851 as 170. I have consulted Mr. Gilbart's writings, and have searched in other works of authority in which information was likely to be found, but I cannot trace any statement, either as to the number, or as to the amount of deposits held, in any intervening period. I add from Dr. W. Neilson Hancock's reports, tables of the aggregate amounts of the private deposits in the Bank of Ireland and the joint stock banks from 1840 to the year 1863, and of the deposits and cash balances from 1864 to the year 1871.

TABLE 7, showing the Aggregate Amount of the Private Balances in the Bank of Ireland, and of the Deposits in the Belfast, Hibernian, National Northern, Provincial Royal, and Ulster Banks, at the end of each year, from 1840 to 1871:—

From "Reports of Deposits and Cash Balances in Joint Stock Banks in Ireland," by Dr. W. Neilson Hancock, LL.D., 1870 and 1872, p. 5 in both Reports:

[000's omitted, thus £5,567 = £5,567,000.]

Date.	£	Date.	£	Date.	£
1840.....	5,567,	1851 .....	8,263,	1861.....	15,005,
		'52 .....	10,773,	'62.....	14,388,
1841.....	6,022,	'53 .....	10,915,	'63.....	12,966,
'42.....	6,416,	'54 .....	11,665,	'64† .....	15,623,
'43.....	6,955,	'55 .....	12,285,	'65.....	18,619,
'44.....	7,601,				
'45.....	8,031,			1866.....	20,957,
		1856 .....	13,753,	'67.....	21,794,
1846.....	8,442,	'57 .....	13,113,	'68.....	22,163,
'47.....	6,493,	'58 .....	15,131,	'69.....	22,672,
'48.....	7,071,	'59 .....	16,042,	1870.....	24,366,
'49.....	7,469,	'60 .....	15,609,	'71.....	27,348,
'50.....	8,268,				

† Deposits and cash balances in the above-named banks from 1864 to 1871, both inclusive.

\* Deducting the 9 offices of the National Bank in London. The corresponding number in 1873 was 372.

To these amounts must be added the share capital invested in the various banks. The particulars are as follows:—

TABLE 8.—*Capitals of Irish Joint Stock Banks.*

Name of Bank, and Year when Established.		Capital Paid-up.	Rate of Dividend per Annum last Declared.
Bank of Ireland .....	1783	£ 2,769,230	11
*Hibernian Bank .....	1824	375,000	10
Provincial ,,, .....	'25	540,000	20
Northern Banking Company .....	'25	300,000	18½
Belfast ,,, .....	'27	250,000	36
National Bank .....	'35	1,500,000	8
Ulster Banking Company .....	'36	250,000	18
*Royal Bank .....	'36	300,000	12
*Munster Bank, Limited .....	'64	262,500	8

\* Thus marked are not banks of issue.

—From “Thom’s Irish Almanac and Official Directory” for 1872, p. 865.

The general aggregate is:—

	Millions.
Deposits (say) .....	27
Note circulation (say) .....	7·5
Total liabilities .....	34·5
Capital .....	6·5
	41·0
	<u>  </u>

It is interesting to compare these statements with the note circulation during the earlier years included in these tables.

The note circulation was as follows:—

	£
1841 .....	5,355,814
'42 .....	5,114,457
'43 .....	5,168,585
'44 .....	5,936,913
'45 .....	6,949,403
'46 .....	7,259,948

“Gilbart’s Works,” vol. iv., 368.

The circulation for the remaining period to the present date will be found in Table 15. It is clear that the earlier history of banking in Ireland pursued very closely the same process of development as in England. Circulation preceded and fed deposits. The credit which the banks obtained by the ready acceptance of their notes brought customers to their counters, and thus the existing

system, fortunate in excellent managers, was built up gradually and surely. The tables of the deposits exhibit a progress unequalled, as far as I know, in any country during a like period.

It is the very highest commendation that can be given to any system of banking when we can say of it, as we can of the Irish system, that it has remained intact and unchanged for so many years. Alone in the Three Kingdoms, Ireland maintains the same limit of authorised circulation as in 1845.

Dr. W. Neilson Hancock, to whom I am indebted for much of the information contained in this statement, remarks that the facility for depositing appears to have a very great influence on the amount of deposits. The correctness of this remark is obvious. It will be noticed that in Scotland, where the number of offices is greater in proportion to the population than in any other part of the United Kingdom, the amount of the deposits is also larger. This point should be borne in mind whenever the existing laws as to banking licences come under review and a rearrangement of the existing system made. A charge for a licence, though insignificant in itself, may be very large in proportion to the amount of business which can be done in a small place, and may cause it to be unprofitable to open a branch in a poor neighbourhood, where nevertheless a branch of a bank might do good service in promoting the energies and industry of the people. There is no doubt that, as Dr. Neilson Hancock states, the Irish joint-stock banks have largely contributed to the prosperity of the country.

“ By their system of deposits these banks have collected the  
“ hoarded wealth of the country, and made it available for purposes  
“ of trade, and by their system of cash accounts and note circulation  
“ they have developed facilities of discounting and a currency for  
“ Ireland as perfect and convenient as exist in England; so that  
“ Irish trade enjoys to the full all the banking and monetary  
“ arrangements it requires, and can widen these as new necessities  
“ spring up.

“ The large and yearly increasing amount of deposits in Irish  
“ banks proves that there is no lack of capital within the country  
“ seeking investment. It argues thrift and a faculty to save among the  
“ Irish people. The state of the circulation in 1872, showing an  
“ average of 7,674,218*l.* higher than in any year since the regulation  
“ of the issue in 1845, corroborates the satisfactory result indicated  
“ by the deposits in the banks, and shows that whilst the progress of  
“ wealth among the trading and farming classes has not been so rapid  
“ as in some recent years, still that there has been progress.”\*

\* “ Reports on Deposits and Cash Balances in Joint Stock Banks in Ireland,”  
By W. N. Hancock, LL.D., Dublin, 1870-73.

VI.—*Inland Bills in Great Britain and Ireland.*

So large a portion of the resources of bankers is employed in discounting bills, that it becomes needful to give a statement of the probable amounts of bills circulating in the country.

In preparing an estimate of inland bills, I have in great measure followed the plan pursued by Mr. Newmarch when he analysed the circulation of bills of exchange in 1851. Since that date the stamp duties on bills have been rearranged.

The rates of stamp duty were as follows during the period over which this inquiry extends:—

Rates of Duty.	Inland Bills. s. d.
Up to 5 <i>l.</i> .....	— 1
5 <i>l.</i> to 10 <i>l.</i> .....	— 2
10 <i>l.</i> „ 25 <i>l.</i> .....	— 3
25 <i>l.</i> „ 50 <i>l.</i> .....	— 6
50 <i>l.</i> „ 75 <i>l.</i> .....	— 9
75 <i>l.</i> „ 100 <i>l.</i> .....	1 —
100 <i>l.</i> „ 200 <i>l.</i> .....	2 —
200 <i>l.</i> „ 300 <i>l.</i> .....	3 —
300 <i>l.</i> „ 400 <i>l.</i> .....	4 —
400 <i>l.</i> „ 500 <i>l.</i> .....	5 —
500 <i>l.</i> „ 750 <i>l.</i> .....	7 6
750 <i>l.</i> „ 1,000 <i>l.</i> .....	10 —
1,000 <i>l.</i> „ 1,500 <i>l.</i> .....	15 —
1,500 <i>l.</i> „ 2,000 <i>l.</i> .....	20 —
2,000 <i>l.</i> „ 3,000 <i>l.</i> .....	30 —
3,000 <i>l.</i> „ 4,000 <i>l.</i> .....	40 —
Upwards of 4,000 <i>l.</i> .....	40 —

In order to ascertain the aggregate sum of money which the bills drawn on these stamps would amount to, I have tabulated 1,400 inland bills, amounting to 648,036*l.*, and representing, as far as possible, different classes of operations and different branches of business. Some of the materials from which this table was composed were collected under my own observation; for the remainder I am greatly indebted to the kind assistance of friends who entered the amounts of the bills, and the dates at which they were drawn, on forms ruled and headed for the purpose.

Although my researches in this direction have not been as great or as complete as Mr. Newmarch's were, yet, I think, that with the assistance which his investigations afforded, I have been able to

arrive at results sufficiently close to justify me in laying them before you with confidence in their accuracy.

The general results are as follows :—

TABLE 9.—*General Summary of the Statement of Bills made for the purpose of this Inquiry.*

Stamps—Inland Bills.	Number of Bills.	Average Usance.	Total Amount of Bills of each Stamp.	Average Bill.
		Months.	£	£
1d. ....	—	—	—	—
2d. ....	39	2·8	342	8·7
3d. ....	315	3·2	5,343	16·9
6d. ....	241	3·2	8,453	35·0
Group I.—Bills to 50 <i>l.</i>	595	2·8	14,138	23·8
9d. ....	87	3·4	5,236	60·2
1s. ....	67	3·5	5,850	87·3
2s. ....	92	3·5	13,457	146·2
3s. ....	71	3·5	20,698	291·5
Group II.—Bills from } 50 <i>l.</i> to 300 <i>l.</i> .... }	317	3·5	45,241	142·7
4s. ....	63	3·1	22,295	353·9
5s. ....	59	3·3	28,234	478·5
7s. 6d. ....	15	3·5	8,496	566·4
10s. ....	11	4·0	7,150	650·0
15s. ....	153	4·3	140,446	918·0
1 <i>l.</i> ....	134	4·1	200,749	1,498·1
1 <i>l.</i> 10s. ....	29	4·1	76,038	2,622·0
2 <i>l.</i> ....	8	5·6	29,386	3,673·2
Upwards of 2 <i>l.</i> ....	16	4·1	75,863	4,741·4
Group III.—Bills } above 300 <i>l.</i> .... }	488	4·0	588,657	1,206·3
Total number of bills } examined .... }	1,400	—	—	—
Total amount ....	—	—	648,036	—

Mr. Newmarch divided the total amount into three groups, viz.:—

- I. Bills up to 50*l.*
- II. Bills from 50*l.* to 300*l.*
- III. All Bills above 300*l.*

The range of stamps now in use does not permit an exactly similar comparison to be made, as far as the smaller bills in Group I

are concerned. To bring my statement as close as the circumstances permitted, I have divided the groups in the following manner:—

Group I, consists of small bills, the utmost limit of which is 50*l.*, the average amount 23·8*l.*, with an usance of 2·8 months.

Group II, includes bills of a medium size, ranging from above 50*l.* to 300*l.*, the largest sum. The average amount is 142·7*l.*, with an usance of 3·5 months.

Group III, contains all bills above 300*l.* The average usance of these bills is 4 months. The average amount 1,206·3*l.*

In dividing the amount of the bill currency into these different groups, I have been actuated by a desire to observe if it is possible to trace the influence of the principal commercial events of the last few years on the trade of the country. The reasons given by Mr. Newmarch for dividing the bills thus, explain what is sought so completely, that I quote his remarks here.

“ Now the chief object of this classification is to obtain, if possible, some insight into the different causes which influence the extent and fluctuations of different portions of the bill currency; for it is very important to bear in mind that there is a most marked distinction to be drawn between several classes of bills; and that these lines of separation have reference chiefly to the magnitude of the bills themselves.

“ If I have succeeded in the arrangement of these groups, I have included in—

“ (1). Group III, the bills which are drawn for considerable sums, between merchants, producers and manufacturers, and wholesale dealers; and between importers and large consumers of raw material; or, speaking generally, between merchants and dealers.

“ (2). Group II, in like manner is intended to contain the class of bills drawn between houses of less extent of business, and wielding a less powerful capital, and also between large wholesale houses and the better class of retail dealers; in general terms, between dealers and retailers.

“ (3). Group I, is meant to include the small bills which belong essentially to retail trade, and may be described with considerable propriety as drawn between ‘retailers and consumers;’ or where the acceptor does not happen to be the actual consumer, still, carrying on a business of so limited an extent, that he is only one step above the class who do literally consume on the supply of their own personal wants the commodities they purchase.

“ The general result, therefore, is this—that by the introduction

" of this arrangement into groups, we have before us, with more or less of completeness, the three great compartments into which the trade of the country may be distinguished with considerable propriety, namely :—

" In Group III, we have the trade carried on by what are called 'first hands,' that is to say, importing merchants, extensive manufacturers, and the largest class of dealers.

" In Group II, we have the trade carried on by what may be called 'second hands,' that is, by houses who supply themselves in a great measure from the importers and manufacturers, and, to a considerable extent, come in contact with the actual consumers.

" This group also includes 'first hand' merchants, and manufacturers of comparatively limited capital and connections.

" In Group I, we have the retail trade of the country, such as shopkeepers, small farmers, dealers in cattle, and so on."—*Journal of the Statistical Society*, vol. xiv, p. 152.

I have given in Table 9 a general summary of the investigation by which the average amount and usance of each bill in these groups was ascertained. I now proceed, in Table 10, to give an estimate, based on the number and amount of bill stamps issued, and formed in accordance with the average amount and usance of each bill, as shown to exist by actual investigation, of the total amount of inland bills created, and of the average amount in circulation for the years from 1856-57 to 1870-71. Cols. 1 and 2 give the estimated amount of bills, cols. 3 and 4 the estimated circulation.

I have added the range of rate and average rate of discount charged by the Bank of England in each year to this table. It will be observed that the amount of bills in circulation is greater in the years when the rates mark a pressure in the money market, than in the years when money was easier. We thus see that high rates of interest cause no contraction in this part of the circulation, which, on the contrary, increases when high rates prevail. This is in accordance with the results observed by Mr. Newmarch, and recorded by him in the sixth volume of "Tooke and Newmarch on the History of Prices."

I have thought it desirable to notice this point here, and that the results I have shown to exist coincide with the experience of other observers, as an impression exists among some persons that bills increase when the rate of discount is low, and decrease when the rate of discount is high. The facts, it will be noticed, are the reverse of this theory.

TABLE 10.—*Inland Bill Circulation, Great Britain and Ireland, from 30th June to 31st March in each Quarter of the Year, for the Years 1856-57 to 1870-71 inclusive.*

[000's omitted from this table in Cols. 1, 2, 3, and 4,—thus £138,400, (Col. 4) = £138,400,000.]

Years.	1	2	3	4	Years.	Bank of England.	
	Estimated Amount of Bills.	Total.	Estimated Amount of Circulation of Bills.	Total Circulation of Bills.		Range of Rate.	Average Rate.
1856-57.....	£	£	£	£	1856	Per cent.	Per an.
'57-58.....	—	498,520,	—	138,400,	'57	4½	7
'58-59.....	—	507,360,	—	141,000,	'58	5½	10
'59-60.....	—	445,760,	—	123,900,	'59	6	2½
'60-61.....	—	487,340,	—	135,200,	'60	4½	2½
'61-62.....	—	537,200,	—	149,100,	'61	3	6
'62-63.....	—	533,900,	—	148,400,	'62	8	3
'63-64.....	—	538,440,	—	149,300,	'63	3	2
	—	598,080,	—	166,200,		8	4½
1864-65.							
Group I, up to 50 <i>l.</i> .....	71,756,	—	16,690,				
" II, 50 <i>l.</i> to 300 <i>l.</i> ....	171,024,	—	50,300,				
" III, 300 <i>l.</i> and } upwards.....	433,694,	676,474,	144,600,	211,590,	1864	9	6
1865-66.							
Group I, up to 50 <i>l.</i> .....	72,398,	—	16,830,				
" II, 50 <i>l.</i> to 300 <i>l.</i> ....	174,789,	—	51,410,				
" III, 300 <i>l.</i> and } upwards.....	428,090,	675,277,	142,700,	210,940,	1865	3	7
1866-67.							
Group I, up to 50 <i>l.</i> .....	74,028,	—	17,280,				
" II, 50 <i>l.</i> to 300 <i>l.</i> ....	180,036,	—	53,000,				
" III, 300 <i>l.</i> and } upwards.....	416,357,	670,421,	138,800,	209,080,	1866	10	3½
1867-68.							
Group I, up to 50 <i>l.</i> .....	76,497,	—	17,780,				
" II, 50 <i>l.</i> to 300 <i>l.</i> ....	177,219,	—	52,100,				
" III, 300 <i>l.</i> and } upwards.....	359,145,	612,861,	119,700,	189,580,	1867	3	2
1868-69.							
Group I, up to 50 <i>l.</i> .....	76,328,	—	17,740,				
" II, 50 <i>l.</i> to 300 <i>l.</i> ....	176,976,	—	52,000,				
" III, 300 <i>l.</i> and } upwards.....	348,984,	602,288,	116,400,	186,140,	1868	2½	3
1869-70.							
Group I, up to 50 <i>l.</i> .....	78,313,	—	18,200,				
" II, 50 <i>l.</i> to 300 <i>l.</i> ....	181,987,	—	53,510,				
" III, 300 <i>l.</i> and } upwards.....	344,115,	604,415,	114,700,	186,410,	1869	4½	2½
1870-71.							
Group I, up to 50 <i>l.</i> .....	79,338,	—	18,450,				
" II, 50 <i>l.</i> to 300 <i>l.</i> ....	181,551,	—	53,400,				
" III, 300 <i>l.</i> and } upwards.....	416,887,	677,776,	139,000,	210,850,	1870	5½	2½
							3

I have carried the calculation as far back as 1856, in order to be able to note the effect of the pressure in 1857, 1861, and 1864, as well as that in 1866. The statements are, like those of the foreign bills, made up from the returns which follow the quarter ended 30th June to 31st March in each year named. The earlier year must, therefore, be taken as the year for comparison. It must also be borne in mind that I have deducted from the total amount of bills which the return of stamps issued from Somerset House showed might have been created, the estimated amount of bills drawn on foreign countries from this country, and stamped with inland stamps. This amount is referred to, and the estimate on which it is based explained, in the part of the paper which deals with foreign bills.

I have made no deduction in this estimate for the amount of bills and promissory notes which, though created, never appear in circulation at all. It is extremely difficult to form any reliable estimate of what this amount may be, but there can be no doubt that it is not inconsiderable. I understand from a solicitor who carries on a very considerable business, that in making advances to clients, a promissory note is not unfrequently drawn out in the course of the transaction, and that this is a very general practice with his profession in dealings of this class. Such a note may be at sight, though it is retained for several years without being ever put into circulation, or meant to be put into circulation at all. Advances made by bankers are frequently made in the same manner; and though these promissory notes are, I believe, more frequently drawn at a date, three or six months, perhaps for a longer period, yet they are never in circulation. On the other hand, I have not included in the table the amounts of bankers' short drafts, or the bank post bills issued by the Bank of England. The bills in existence under these two heads may amount to two millions and a half at one time. Their omission may be taken as compensating in some degree for the including in the table the amount of promissory notes and bills never actually in circulation, though I believe that these latter must very greatly exceed the amount of bankers' bills of all descriptions.

I have only divided the years 1864-71 into groups. In these years I calculated the amount of bills created on each denomination of stamps, the basis of this calculation being the average amount of bills as shown to be in actual circulation according to the results stated in Table 9. The groups are formed from the aggregate of the amounts so calculated.

The labour which this subdivision entailed prevented me from carrying the calculation back in this form, over the whole period included in the table. The division into groups, however, is carried sufficiently far to show that while the total amount of bills diminished

greatly after the crisis of 1866, the diminution was confined to the bills comprised in Group III, containing the bills representing the larger and more speculative transactions which it may be presumed were, to a considerable extent, checked by that crisis. The bills in Groups I and II, which more closely correspond to the internal and retail trade of the country, remained either stationary or experienced a small increase in their amounts. The total sums are large. When, however, we compare them with the amounts in circulation in former years, the increase is hardly as great as other circumstances might lead us to expect. The aggregate of bills in circulation is probably not more than 300 to 350 millions at one time, including foreign bills. Mr. Newmarch's estimate for 1856 is that the corresponding amounts were then not much less than 180, or probably 200 millions,\* while the banking deposits at that date were probably by no means the half, perhaps not more than the third part of what they are at the present time.

Taking the vast increase in banking deposits since 1856 into consideration, the amounts now under discount would certainly appear to be smaller now in proportion to other forms of advances, than they were at former periods. And the use of inland bills in general appears also to be smaller in proportion. In Mr. H. Thornton's "Inquiry into the Nature and Effects of the Paper Credit of 'Great Britain'" in 1802, as far as I can gather from the contemporary notice of it in the "Edinburgh Review," inland bills appear to be spoken of as forming a far more important portion of the circulating medium of the country, than they would be at the present time. Mr. W. Leatham also, writing in 1841, ascribes to inland bills a position which would hardly be done now. Mr. Leatham says, "Bills perform every function that can be assigned to the notes of "the Bank of England, with a quality, to make remittances by post, "which the notes cannot possess; and the only specific difference "between them is, that a limited time is attached to one and not to "the other; but when at maturity, bills are converted into gold with "as much legal certainty as bank notes. When the origin of bills "is *bonâ fide* and legitimate, I place them, with the security of the "drawer, acceptor, and perhaps twenty endorsements on the back, "in the first class of our currency—before notes, and next in rank "only to gold. I know of no purpose of money except wages to "which bills are not applicable, in the provinces throughout this "kingdom, though not seen in London in making payments. It is "in the recollection of many persons, that all the woollen business "of the West Riding was conducted by bills of exchange at two "months' date, as low as five pounds, drawn without stamps, with

\* "Tooke and Newmarch's History of Prices," vol. vi, p. 588.

“ gold for wages, without the intervention of bank notes, previous to the last war.”\* It will be observed that Mr. Leatham, while attributing to the circulation of bills in general, an importance which would hardly be ascribed to it now, speaks of this particular circulation in the West Riding rather as a thing “in the recollection of many persons,” than as something existing when he wrote. I have made inquiries from bankers conversant with those districts, and I find, as I had no doubt was the case, that though in the early part of the century, such a system of two months’ bills was in use for payments of all kinds for trade purposes, the practice has long since disappeared. In Mr. Newmarch’s statement, made in 1851, the proportion which bills bear to sums on deposit with bankers is considerably larger than my estimate of the corresponding amount now. All these circumstances lead us to a surmise that, as in the earlier stages of banking in this country, a far greater use of notes was made than at the present time; so it will be found that as time goes on, and other forms of credit come into use, bills also will probably occupy a smaller part in the circulation of money, and cheques tend to supersede them. We are thus brought to the consideration of how little use it is to attempt to regulate the ebb and flow of the currency of money in this country by attending to one portion of it, whether that one portion be the amount of bills or of notes in circulation, to the exclusion of the remainder. To arrive at any just conclusion, the whole of the subject should be taken into consideration.

## VII.—*The Various Classes of Foreign Bills.*

Mr. Goschen remarks, in his work on the foreign exchanges, “that the supply of bills upon England seems to be almost inexhaustible.” This observation recurred to my mind while endeavouring to investigate this subject. There is, however, a great difficulty in forming an exact estimate of the amount of these bills, and that difficulty lies in discovering a sound basis on which such an estimate may be founded.

In speaking of “foreign bills,” it must be borne in mind that all bills originating elsewhere than in Great Britain and Ireland are technically spoken of as *foreign* bills. These bills, therefore, include all bills drawn from our colonies, and the Channel Islands, as well as those drawn from all foreign countries.

The rates of stamp duty for foreign bills to January, 1871, were as follows:—

\* “Second Series of Letters.” W. Leatham, London, 1841, pp. 37 and 38.

*Rates of Stamp Duty on Foreign Bills, in use till January, 1871.\**

Rates of Duty if Drawn in Sets of Three or more.	£ s. d.	Rates of Duty if Drawn Singly or otherwise than in Sets of Three or more.	£ s. d.
Up to 25 <i>l.</i> .....	— — 1	Up to 5 <i>l.</i> .....	— — 1
25 <i>l.</i> „ 50 <i>l.</i> .....	— — 2	5 <i>l.</i> to 10 <i>l.</i> .....	— — 2
50 <i>l.</i> „ 75 <i>l.</i> .....	— — 3	10 <i>l.</i> „ 25 <i>l.</i> .....	— — 3
75 <i>l.</i> „ 100 <i>l.</i> .....	— — 4	25 <i>l.</i> „ 50 <i>l.</i> .....	— — 6
—	—	50 <i>l.</i> „ 75 <i>l.</i> .....	— — 9
100 <i>l.</i> „ 200 <i>l.</i> .....	— — 8	75 <i>l.</i> „ 100 <i>l.</i> .....	— 1 —
—	—	—	—
200 <i>l.</i> „ 300 <i>l.</i> .....	— 1 —	100 <i>l.</i> „ 200 <i>l.</i> .....	— 2 —
300 <i>l.</i> „ 400 <i>l.</i> .....	— 1 4	200 <i>l.</i> „ 300 <i>l.</i> .....	— 3 —
400 <i>l.</i> „ 500 <i>l.</i> .....	— 1 8	300 <i>l.</i> „ 400 <i>l.</i> .....	— 4 —
—	—	400 <i>l.</i> „ 500 <i>l.</i> .....	— 5 —
500 <i>l.</i> „ 750 <i>l.</i> .....	— 2 6	Up „ 700 <i>l.</i> .....	— 7 6
—	—	„ „ 1,000 <i>l.</i> .....	— 10 —
750 <i>l.</i> „ 1,000 <i>l.</i> .....	— 3 4	Up „ 1,500 <i>l.</i> .....	— 15 —
1,000 <i>l.</i> „ 1,500 <i>l.</i> .....	— 5 —	—	—
1,500 <i>l.</i> „ 2,000 <i>l.</i> .....	— 6 8	Up „ 2,000 <i>l.</i> .....	1 — —
2,000 <i>l.</i> „ 3,000 <i>l.</i> .....	— 10 —	—	—
3,000 <i>l.</i> „ 4,000 <i>l.</i> .....	— 13 4	Up „ 3,000 <i>l.</i> .....	1 10 —
—	—	—	—
4,000 <i>l.</i> „ 5,000 <i>l.</i> .....	— 16 8	Up „ 4,000 <i>l.</i> .....	2 — —
5,000 <i>l.</i> „ 6,000 <i>l.</i> .....	1 — —	Upwards of 4,000 <i>l.</i> .....	2 — —
6,000 <i>l.</i> „ 7,000 <i>l.</i> .....	1 3 4		
7,000 <i>l.</i> „ 8,000 <i>l.</i> .....	1 6 8		
8,000 <i>l.</i> „ 9,000 <i>l.</i> .....	1 10 0		
9,000 <i>l.</i> „ 10,000 <i>l.</i> .....	1 13 4		
10,000 <i>l.</i> „ 11,000 <i>l.</i> .....	1 16 8		
11,000 <i>l.</i> „ 12,000 <i>l.</i> .....	2 — —		
Upwards of 12,000 <i>l.</i> .....	2 — —		

\* The Act 33 and 34 Vict., cap. 97, abolished the distinction between inland and foreign bills, and altered the rate of duty from January, 1871. The numbers given for the quarter ended 31st March, 1871 (the last quarter of the year which completes the Table of estimated amount of foreign bills), are in accordance with the amounts of the bills. The stamps having been partly at the old and partly at the new rate for that quarter.

The number and amount of foreign bill stamps annually issued in the United Kingdom is the only basis available for such a calculation as it was needful to make; and on it I have endeavoured to construct an estimate of the aggregate amount of the bills which those stamps would be likely to carry in the ordinary course of business. The number of stamps of each denomination sold, and the amounts received for the total number, are published in the "Miscellaneous Statistics," but while the number of foreign and inland bill stamps issued, and the amounts paid for them, are carefully divided, no record is kept as to what portion of the foreign stamps was employed for bills drawn—

*On this country from foreign countries.*

*From one foreign country on another foreign country, and  
negociated here.*

*From England on other foreign countries.*

I have, therefore, to commence with an estimate of the probable amount of *all* bills created on the foreign bill stamps issued in the years 1859-60 to 1870-71 inclusive. This estimate is formed on the same basis as that employed for inland bills.

TABLE 11.—*Estimate of the Total Amount of ALL Bills Created on Foreign Bill Stamps Issued for the Years 1859-60, 1870-71 inclusive.*

[000's omitted, thus £349,300, = £349,300,000.]

Years.	Amount. £	Years.	Amount. £
1859-60.....	349,300,	1865-66.....	578,100,
'60-61.....	411,600,	'66-67.....	529,700,
'61-62.....	373,900,	'67-68.....	514,900,
'62-63.....	401,800,	'68-69.....	531,300,
'63-64.....	485,400,	'69-70.....	567,400,
'64-65.....	577,200,	'70-71.....	587,100,

These amounts approach comparatively closely to those of the inland bills for the same periods. The question before us, and one far from easy to answer, is to separate these enormous amounts, and to allot them to the various classes of operations which they doubtless represent. I proceed to mention the method followed in pursuing this investigation.

Up to 1st January, 1871, some of the stamps included under the head of foreign stamps were impressed, and some adhesive. If I had been able to ascertain accurately the proportion of each description, one element of difficulty in the computation of the amount of foreign bills in circulation would have been removed, adhesive bill stamps being exclusively used either for the bills drawn on Great Britain from a foreign country, or for those drawn by one foreign country on another, and negotiated in this country.

Mr. Hammick very kindly interested himself to ascertain for me whether the information required could be obtained from the Inland Revenue department in Somerset House. The reply, however, was that the proportion of impressed to adhesive stamps could not be ascertained, but that it was very small. Some indications, however, are given in the published returns as to the number of foreign stamps issued in sets of three or more. It was more usual, while the impressed stamps in sets were in force, to stamp all the bills of a set to be sent out of the country, than all the bills of a set received in the country; of these one only was more usually stamped. After considering the question, and obtaining all the information in my power, I proceeded, assisted by an estimate kindly supplied by Mr. E. Seyd, to endeavour to separate the bills drawn *in* this country

on foreign countries from those drawn *on* this country *from* foreign countries, on the basis supplied by these indications. It became then necessary to endeavour to separate further the amount of bills drawn from *one* foreign country on *another* foreign country, and negotiated in this country; these bills also, as stated before, being stamped with adhesive stamps. Of these it is only possible to form an estimate. In doing this I have received much valuable help, as I have mentioned, from Mr. E. Seyd and Mr. Jourdan, both members of the Council of this Society.

We will first consider the bills drawn by this country on other countries, and it will be best to give Mr. Seyd's statement of their amount in his own words:—

“The bills drawn inland on abroad are either sold on change here, or remitted abroad by the holders. Mr. Jourdan (a member of our Council), agrees with me that the sales on change range between 350 and 450 thousands each change day; or about average 700 thousands per week. Take 300 thousands as remitted, we should have about 1 million per week or about 50 millions per annum (you might check this if you could obtain the amount of *set stamps* before they were abolished). The reason why such foreign bills are but a moderate amount, is that our bankers discourage them, and that many English merchants and manufacturers require their debtors abroad to remit to them. You might take 50 or 60 millions per annum as the amount.”

When we have separated the bills drawn *on* foreign countries *from* this country, as is done in col. 4, Table 12, we shall be able to form a more just idea of the amount of bills drawn *on* this country from abroad. It is not possible to state this with complete accuracy, since, as mentioned before, “all bills originating abroad, whether accepted here or merely negotiated here, would only be furnished with adhesive stamps.” Bills, therefore, which may pass through this country, drawn in *one* foreign country *on another* foreign country, and negotiated here, are stamped with similar stamps to the bills drawn on England and arriving from abroad. These bills, therefore, must be included in any calculation of foreign bills based on the number of foreign stamps issued, and their amounts can only be arrived at in an approximate way, by means of an estimate. I obtained from those best qualified to express an opinion, their idea of the probable amount of these bills for the last year, and I deducted that amount, and the same proportion for previous years. These amounts will be found in col. 5, headed “Foreign Bills Negotiated in England.” After this deduction was allowed for, I believe that the estimate in col. 6 is the closest which it is possible to make of the amount of bills from abroad annually arriving in this country. It is better to use the words “arriving in,” than “drawn *on*,” at this stage of the inquiry. The latter might lead to the

impression that all these bills were drawn for the debts of England to foreign countries; and represented thus the amount of money which foreign countries could withdraw from England at any time. I believe that a very considerable deduction from the amount must be made for the reason which Mr. Seyd mentions, that many of these bills merely represent money due to English merchants and manufacturers on foreign account. I shall consider this part of the question further on. I now supply an analysis of these bills into the three heads of bills drawn as estimated in Table 12:—

England on Foreign Countries, col. 4.

Foreign, on Foreign, negotiated in England, col. 5.

Foreign on England, col. 6.

And I have estimated the average circulation of these last-named bills in col. 7.

TABLE 12.—*Of the Total Amounts of Imports and Exports for the Years 1860-71 inclusive, Cols. 1, 2, and 3; and also of the Amount of Bills Drawn in England on Foreign Countries, Col. 4; from one Foreign Country on another Foreign Country, and Negotiated in England, Col. 5; from other Countries, including in this all British Colonies, on England, Col. 6, for the Years 1859-60 to 1870-71 inclusive.*

[In this table the amounts stated in Cols. 1, 2, and 3 are in millions; 000's are omitted in Cols. 4, 5, 6, and 7, thus £43,600, = £43,600,000.]

	1	2	3	Quarter Ended 30th June to 31st March in each Year.	4	5	6	7
	Imports. * Mlns.	Exports. * Mlns.	Total of Imports and Exports, including Bullion.* Mlns.		Drawn, England on Foreign.	Foreign on Foreign, Negotiated in England.	Amount of Foreign on England.	Estimated Average Circulation of Foreign Bills (Amount given in Col. 6) in England.
	£ 211, 23,	£ 165, 25,	£		£	£	£	
1860. Merchandise Bullion .....	234,	190,	424,	1859-60	43,600,	18,300,	301,900,	83,900,
	236,	181,	417,		1860-61	51,300,	21,500,	
1861. Merchandise Bullion .....	217, 19,	160, 21,		1861-62	46,600,	19,600,	323,200,	89,800,
	257,	195,	452,		50,200,	21,000,	347,300,	
1862. Merchandise Bullion .....	225, 32,	166, 29,		1862-63				96,500,
	249, 30,	197, 26,	502,					
	279,	223,						

TABLE 12.—*Total Amounts of Imports and Exports for the Years 1860-71—Contd.*  
 [Amounts in Cols. 1, 2, and 3, are in millions; 000's omitted in Cols. 4, 5, 6, and 7, thus £60,700, = £60,700,000.]

	Imports. * Mlns.	Exports. * Mlns.	Total of Imports and Exports, including Bullion.* Mlns.	Quarter ended 30th June to 31st March in each Year.	Estimated Amount of Bills in each Year.			
					4	5	6	7
					Drawn, England on Foreign.	Foreign on Foreign, Negotiated in England.	Amount of Foreign on England.	Estimated Average Circulation of Foreign Bills (Amount given in Col. 6) in England.
1864.	£	£	£		£	£	£	£
Merchandise	275,	213,						
Bullion .....	28,	23,						
	303,	236,	539,	1863-64	60,700,	25,400,	419,500,	116,500,
1865.								
Merchandise	271,	219,						
Bullion .....	21,	15,						
	292,	234,	526,	1864-65	72,100,	30,200,	498,900,	138,600,
1866.								
Merchandise	295,	239,						
Bullion .....	34,	21,						
	329,	260,	589,	1865-66	72,100,	30,300,	499,700,	138,800,
1867.								
Merchandise	275,	226,						
Bullion .....	24,	14,						
	299,	240,	539,	1866-67	66,100,	27,700,	457,900,	127,300,
1868.								
Merchandise	295,	228,						
Bullion .....	25,	20,						
	320,	248,	568,	1867-68	64,300,	27,700,	445,000,	123,600,
1869.								
Merchandise	295,	237,						
Bullion .....	21,	16,						
	316,	253,	569,	1868-69	66,300,	27,800,	459,300,	127,600,
1870.								
Merchandise	303,	244,						
Bullion .....	29,	19,						
	332,	263,	595,	1869-70	70,800,	29,800,	490,400,	137,300,
1871.								
Merchandise	330,	282,						
Bullion .....	38,	34,						
	368,	316,	684,	1870-71	73,500,	30,700,	507,400,	141,000,

\* These amounts are taken from the "Statistical Abstract of the United Kingdom for 1872," p. 17, and include among the exports the total value of foreign and colonial produce, as well as of British produce, exported.

I have added, for facility of reference, the total estimated value of exports and imports, including bullion, in the United Kingdom, as these amounts give some criterion of the extent of the foreign trade of the country. I have included the imports and exports of bullion, and the foreign and colonial produce exported here, though I have not taken them into account in Table 14, comparing the returns from the Clearing House, and the imports and exports, with the circulation. Dealing with the internal trade of the country only at that point, these movements of bullion and re-exports appeared to form no part of the business then under consideration.

In forming this table I have calculated the amount of bills drawn in England on foreign countries, as bearing the same proportion to the stamps issued as the inland bills. Among those foreign bills which I have observed, I have remarked that the smaller ones have been drawn rather less close to the possible limit than the corresponding inland bills. The larger foreign bills, on the other hand, have been drawn closer up to the limit. We may, therefore, on an average, take the general results as corresponding with the similar particulars of inland bills. I then estimated, as nearly as I could, as is mentioned before, the amount of bills drawn on *impressed* stamps; these were the bills drawn in sets of three or more. To this amount I added half as much again for bills drawn singly, as I understood from very good authority that this was about the proportion of such bills, to bills drawn in sets. Since these bills were drawn on *ordinary inland* stamps, I have deducted the amounts so estimated from the inland bills, and as it was probable that these bills would for the most part exceed 50*l.* in value, I have in those years for which the amount of inland bills is divided into groups, deducted the amount from Groups II and III. The estimate of these groups of bills in Table 10 is, therefore, diminished to that extent. The total amounts so computed will be found in col. 4 of Table 12, headed "England on Foreign." Col. 5 contains the estimated amount of bills drawn from one foreign country on another, and negotiated in England. It is presumable that most of these bills, if not all of them, are drawn in connection with our export trade, and are remitted by those to whom a corresponding proportion of our exports are consigned. Mr. Seyd's estimate is, that one-third of our exports are drawn for and two-thirds remitted for. We ought according to that proportion, to deduct from the amounts in col. 6, "Foreign on "England," twice the total amount in col. 4, "England on Foreign," in order to arrive at some idea of the amount of foreign bills representing the debts of this country to foreigners.

We must not, in considering this part of the question, lose sight of the very large amount of foreign loans raised within this country, since foreign bills on England are often drawn in connection

with these loans. The amounts for the years 1870 and 1871 are as follows:—

Description.	Years.	Amount.	Paid-up.
*Foreign loans .....	1870	61 millions	38 millions
† „ .....	'71	198 „	121 „

\* Commercial History and Review, the "Economist," 1870, p. 35.

† Ibid, 1871, p. 48.

Two other points have to be borne in mind. The first is the amount of coupons of foreign loans remitted abroad for collection. As the place of payment for many of these coupons is optional, and they may either be presented in London or Paris, or some great foreign centre of trade, at the choice of the holder, I am utterly at a loss to form any dependable estimate of the amounts which may be remitted abroad, but they may be not inconsiderable. On the other hand, similar coupons may be forwarded here. We may perhaps roughly set off the coupons which are remitted here and those which are remitted abroad as balancing each other. The second point is the number of letters of credit, which do not require foreign bill stamps, and hence are of necessity excluded from any estimate based on the number of stamps issued. A large business is done in "delegations," as these letters of credit (not bills of exchange) with 1*d.* stamps attached, payable on demand, are called. Thus, Paris bankers give "delegations" on London, and London houses on Paris and other places on the continent. Mr. Seyd computes that these delegations amount on an average to about—

10 millions in a-year foreign delegations on London

15 „ English delegations on foreign countries.

Bearing this fact in mind, taking also the amounts of foreign loans into consideration, but excluding the coupons, we ought now to find that the various classes of foreign bills thus estimated should correspond fairly closely with the amounts of the total exports, imports, and loans. If these amounts correspond it will be obvious that they will check the accuracy of the amounts of bills estimated. I take the year 1870 as the latest in the table. As the yearly statement of bill stamps is made up for quarters ending 30th June in one year, to that ending 31st March in the next, I have to compare the totals of 1870 with the bill currency of 1870-71, from Table 12.

*Estimate of Imports and Foreign Loans for 1870, and of the Manner in which these may have been Drawn for.*

	Mlns. £	Mlns. £
Total of imports (col. 1) .....	332	Total of bills, foreign on Eng- }
Add loans paid up .....	38	land (col. 6) .....
	<hr/>	507
		Add delegations .....
		10
		<hr/>
		517
		Deduct twice the estimated amount of bills, England on foreign (col. 4), as representing portion of exports <i>remitte</i> d for, and therefore 'included among the above, say .....
		147
		<hr/>
Total of imports and loans....	370	Leaving bills representing.....
	<hr/>	370

I now turn to the exports:—

*Estimate of Exports for 1870, and of the Manner in which these may have been Drawn for.*

	Mlns. £	Mlns. £
Total of exports (col. 2) .....	263	Estimated amount of bills, }
		England on Foreign (col. 4) }
		73·5
		Twice this amount, deducted, }
		as stated above, from the }
		total of col. 6 .....
		147·0
		Foreign on Foreign, nego-
		tiated in England (col. 5) }
		30·7
		Delegations .....
		15·0
		<hr/>
Total of exports .....	263	Total of bills .....
	<hr/>	266·2

*Note.*—The amounts in this table, and in that immediately preceding, are in millions. The references (col. 1, &c.) are to Table 12.

These estimates assist us in understanding why the amount of bills drawn Foreign on England is so enormously large, and support the belief that the general computation is correct very strongly. I now proceed to complete this analysis by separating the bills representing the debts due by this country to other countries, from the general mass of foreign bills on the principle thus indicated, of deducting, from the totals of bills drawn Foreign on England (col. 6), *twice* the amount of bills drawn England on Foreign (col. 4). The results are as follows; they give as clear an idea as can be formed of the amount of those bills which represent the debts of this country to other countries.

TABLE 13.—Calculated, as stated above, from the Amounts in Table 11 and Table 12, and giving the Estimated Amount and Circulation of Bills Representing the Debts of this Country to other Countries.

[000's omitted, thus £214,700 = £214,700,000.]

Years.	Estimated Amount of Foreign Bills Representing Debts from England to Other Countries.	Estimated Average Circulation of such Bills.
	£	£
1859-60 .....	214,700,	53,675,
'60-61 .....	253,300,	63,325,
'61-62 .....	230,000,	57,500,
'62-63 .....	246,900,	61,725,
'63-64 .....	298,100,	74,525,
'64-65 .....	354,700,	88,675,
1865-66 .....	355,500,	88,875,
'66-67 .....	325,700,	81,425,
'67-68 .....	316,400,	79,100,
'68-69 .....	326,700,	81,675,
'69-70 .....	348,800,	87,200,
'70-71 .....	360,400,	90,100,

These estimates are the closest that can be obtained. The amounts due from this country to other countries support the belief that the general computation is correct. We can now understand why the amount of bills drawn Foreign on England is so large, and the different classes of operations which they represent, and we can see that the enormous and rapidly increasing amount of these bills is an additional element in English banking business which may exercise a very great influence at any time of pressure or panic.

During the period of twelve years over which the table extends, a larger increase in foreign bills of all descriptions, than in the corresponding amounts of inland bills, will be observed. The inflation during the years 1863-66 is also marked, and also the reaction which followed. The effect of the crisis in the year 1866 is more conspicuous in these amounts than in the corresponding statement of inland bills.

The following extracts from Mr. Goschen's work on foreign exchanges give a very clear statement of the vast power over the English money market which those bills must exercise.

“ It seems to be evident that when the exchanges are manifestly “ against any country, and it is perceived that a balance of in- “ debtedness is the cause, the equilibrium can be restored only in “ two ways: the one being the increase of exports and diminution “ of imports, the other an advance in the rate of interest.

“ We now come to the fact, which it is very important clearly “ to appreciate, that at any moment there is in the hands of bankers

" and exchange dealers a large amount of bills on various countries, " held partly for the purpose of speculating on a rise or fall in the " price of bills, but, to a very large extent, solely for the sake of " the interest which is to be made on them. Bills on England, " owing to the high rate of interest which they often bear, as com- " pared with continental rates, are a favourite investment abroad. " In Paris, Berlin, Frankfort, Hamburg, and other continental " cities, the bills on England held by the bankers and joint stock " companies often amount to many millions sterling; and a very " large sum remains in their hands for several months—in fact, " from the time when the bills are drawn to the time when they are " due. The immense importance of this circumstance cannot be " overlooked."—"Goschen's Foreign Exchanges," pp. 125 and 135.

As it was impossible to ascertain the length of time during which these bills are afloat in England, I have assumed, in estimating the average circulation of these bills, an average currency of three months in this country: as I understand, on very high authority, that this is the probable estimate. I have been very desirous of finding some statement of these bills in former years, for the purpose of comparison with the present time. I have made every possible search, but with the exception of Mr. W. Leatham's estimate, which, as I understand it, was that the foreign bills in circulation in 1839 were one-sixth of the inland bills, in which case they would have amounted to 24 millions at that date, I can find no earlier estimate than Mr. Newmarch's in 1851. This was that the foreign bills in circulation at that time were about 16 millions. The contrast between that period and the present is very remarkable.

It is obvious that, in proportion as the amount of these bills increases, and from the estimate I have given it is equally obvious, how very large and progressive that increase is, the influence of the foreign demand over the English money market must increase in proportion. That demand must always have a tendency to create and to maintain a current of the precious metals flowing outwards from this country. The analysis of the foreign bills also shows how small in comparison the amount of bills drawn on foreign countries, and held in this, is at any time likely to be, and how feeble in consequence in this respect are the means of influencing the foreign exchanges which this country can exercise. It has been proposed, and the suggestion deserves the most careful attention, that under present circumstances it would be very desirable for English bankers to follow the practice pursued by the bankers in the principal centres of continental commerce, and referred to by Mr. Goschen in the extract from his book I have just quoted, and to hold in reserve in England a considerable amount of bills on the great banking houses of other countries. Such reserves would largely

tend to strengthen the position of English banking, for, as matters stand at present, it is obvious that the influence which foreign bills may exert on the English money market will also tend to augment the rapidity of the exhaustion of the Bank of England reserves in time of pressure, and that the rate of interest charged by the Bank at such periods must be proportionately raised higher, and continue at a high rate longer. The history of the last three crises fully bears out this conclusion.

### VIII.—*The Circulating Medium of the Country, and the Act of 1844.*

It is only from a historical point of view that we can at the present time understand the great importance ascribed by Sir Robert Peel to regulating the amount of bank note money in circulation, whether these notes were issued by the Bank of England, private, or joint stock banks.

In 1844 Sir Robert Peel had, besides 1839, 1819 still fresh in his memory.\*

Sir Robert Peel's name will ever be associated with the resumption of cash payments resolved on in 1819. We can well enter into the deep and natural desire felt by that great statesman to ensure the convertibility of the Bank of England note. Paper money meant a very different thing in this country during the early years of this century from anything which it has done since, and it played a very different part in banking operations.†

A comparison of the facts as existing in 1819, 1844, and 1872, will enable us to understand how completely the circumstances have altered during the last fifty years.

In 1819, the amount of notes in circulation was—

	£
Of Bank of England notes .....	25,657,610
„ English country &c „ „ .....	15,701,338
A total of more than .....	41,000,000

\* See Sir Robert Peel's Speeches on 6th and 20th May, 1844.

† The determined opposition shown in 1818 to Lord Liverpool and Mr. Vansittart's proposed legislation on the note circulation by the country bankers, marks the importance that they ascribed to the power of issuing notes then. MS. letters of that date in my possession, written by two country bankers, both of them members of parliament, are to the same effect. In the evidence taken before the Committee on the Bank of England Charter in 1832, one banker stated that his deposits at that time were about twice his issues of notes, another intimated that they were about equal. I have an early reminiscence of being told, while a lad, of banks whose note circulation bore a considerably higher proportion even than these, to the amounts of deposits held. No published account at the present time states the note issues as any thing but a very small fraction indeed of the deposits.

The gold coinage of the year was less than four thousand pounds (3,574), and the progressive accumulation of gold coined since 1817, the year when coining gold was resumed, had been little more than seven millions (7,137,711).\* It is difficult to estimate how much of this amount of gold, or what amount of gold, was in circulation in the country at that time. In Tooke's "History of Prices," vol. i, p. 245, the amount of gold in circulation in 1800 is estimated as being barely 8 millions. Considering the great pressure for foreign payments between 1800 and 1819, a great diminution of this amount is probable at the later date. Marshall's "Digest" states that the Bank of England held of coin and bullion together—

	£
28th February, 1819 .....	4,184,620
31st August, , .....	3,595,360

These are not the amounts of coin only, but of coin and bullion together; it therefore seems impossible to suppose that there can have been more than ten millions of gold coin circulating in England in 1819. Comparing 1872 with 1819 we find that the note circulation of England is now about 30 millions, that is, 10 millions less; the metallic circulation about 105 millions, that is, about 95 millions more. I have to limit the comparison in 1819 to England alone; as, though I have made every possible search, I have been unable to obtain dependable information as to the note circulation in Scotland and Ireland at that time.

In 1844 the gold circulation was estimated by Mr. Newmarch at 36 millions.† The note circulation of the whole kingdom was 37 millions. The notes were, therefore, slightly in excess of the gold at that time.

In 1872 the metallic circulation altogether may be estimated at about 105 millions.‡ The note circulation of the whole kingdom was 43 millions; instead, therefore, of the notes being more than the metallic circulation, they are much less than one-half of it, and are probably but little more than one-third of the specie circulation and the bullion in the Bank of England taken altogether.

The amount of business done in the country may be roughly tested by the extent of the imports and exports. These were as follows (in millions):—

\* "Marshall's Digest." Part II, p. 62.

† "Tooke and Newmarch's History of Prices," vol. vi, p. 701.

‡ Estimate based on Professor Jevons' statement, Statistical Society's *Journal*, 1868, pp. 446, and the account of the "Coinage of Gold for Twenty-four Years," "Economist," 29th June, 1872.

	1819.*	1844.*	1872.†
	Mlns.	Mlns.	Mlns.
Imports .....	30	85	353
Exports .....	35	59	255
	65	144	608

\* Porter's "Progress of the Nation," p. 356.

† From Board of Trade returns.

In 1819 the imports and exports together were not twice the amount of the note circulation. In 1844 they were about four times as much. In 1872 they were more than fourteen times as much.

There are two other standards, besides the imports and exports, by which we may attempt to measure the proportion which the note circulation bears to the total means and wealth of the country. These are, the proportions borne by the amount of notes to the population of the country, and to the business generally, as shown by the Clearing House returns.

Comparing the note circulation with the population—

	£ s.
In 1844 the note circulation was about .....	1 7 a-head.
„ '72 „ „ also ....	1 7 „

for the total population of the United Kingdom.

But taken by the three great divisions of the circulation it was—

In 1844.	In 1872.
£ s. d.	£ s.
1 15 8 about a-head for England and Wales .....	1 6
1 3 - „ Scotland .....	1 10
- 14 9 „ Ireland .....	1 8

Therefore, relatively to population, while the note circulation has remained stationary for the kingdom at large, it has diminished considerably in England and Wales, but has increased considerably in Scotland and Ireland.

If we compare the general circumstances, we shall see how completely the circulation of the country has in recent times passed, from being a circulation in notes, to being a circulation in cheques. To show this more clearly, I have prepared Table 14, exhibiting side by side the relative position of the note circulation in 1844 to the exports and imports, and to the amounts passed through the London Clearing House. I have also continued this statement from the commencement of 1868 to the end of 1872. It is to be remembered that a considerable number of payments made for the country banks,

through the medium of the country clearing, are included in these figures. Some also of the cheques included, the proportion of which cannot be ascertained, have passed through several hands, and thus represent even a larger circulation than the Clearing House figures imply. A cheque which had received ten endorsements, and consequently had passed through at least as many hands (not including three banks) in five days, has come under my own observation. Such instances are rare, though a second, sometimes a third endorsement is not infrequent. The course which cheques payable to bearer take cannot be traced with equal certainty, but it is probable that they pass through at least as many hands as those payable to order. Altogether it is beyond doubt that cheques form a real circulation, and are the most usual method of circulating money at this period.

In cols. 6 and 9 we see that, though the note circulation has increased since 1868, its progress has been far less than that of the exports and imports, as shown in cols. 1 and 2. The greatest increase by far is in the clearing, as shown in cols. 3 and 4.\* Not only have the amounts passed through the clearing increased in themselves, as shown in cols. 3 and 4, but, as shown in cols. 5 and 8, in a far greater proportion than either the exports and imports or the note circulation, which will be found in cols. 6 and 9. The decimal proportion of the total exports and imports to the clearing in 1868 was .137; in 1872 this proportion had sunk to .103. Taking the note circulation as represented by 1, the clearing was represented by the figure 87 in 1868; in 1872 this figure had risen to 135. Comparing the exports and imports with the note circulation in the same way, the amounts of these in 1868 were represented by the figure 12. This figure, by 1872, had only increased to the figure 14. Test it in any way you will, you will find that the increase in the circulating medium has been in the amounts passed through the Clearing House; and further, that the increase in the clearing has been greater than the increase in the trade of the country generally. It is true that these returns give no exact measure of the transfers arising from actual trading transactions, for all the Stock Exchange business is settled in this way, and we can only guess what that is by observing the enormous amounts passed through on the settling days. But taking a broad view of the subject, it is obvious that in examining this part of the question, the Clearing House returns are now the important point to be considered.

\* It is much to be regretted that the recommendation of the late Mr. Babbage, which occurs in his analysis of the statistics of the Clearing House in the Society's *Journal* for 1854, that it was desirable that the returns of the clearing should be published, was not followed at the time. A record of the fluctuations of the clearing for the last ten years would be a most valuable guide in gauging the effect of the periods of pressure on the money market.

TABLE 14.—*Exports and Imports of United Kingdom, Amounts passed through the London Clearing House, and the Total Bank Note Circulation of all the Banks in the United Kingdom.*

[The amounts in Cols. 1, 3, and 6 in this table are in millions, thus £144 (in Col. 1) = £144,000,000.]

Year.	1 Exports and Imports in Millions.	2 Increase of Exports and Imports. 1868=100.	3 Clearing in Millions.	4 Increase of Clearing since 1868 1868=100.	5 Decimal Proportion of Total Exports and Imports to Clearing.	6 Bank Note Cir- culation in Millions.	7 Proportion of Exports and Imports together to Note Circulation. Note Circulation=1.	8 Proportion of Note Circulation to Clearing. Circulation=1.	9 Increase in Bank Note Circulation since 1868. 1868=100.
1844. Exports Imports	£ 59 85		£			£			
Total*	144	—	say 1,500	† —	—	37·38	Exports and Imports say } 3	Clear- ing, say } 40	—
1868. Exports Imports	179 294								
Total	473	= 100	3,466	= 100	.137	39·75	Exports and Imports say } 12	Clear- ing, say } 87	= 100
1869. Exports Imports	189 295								
Total	484	102	3,602	104	.134	39·85	Exports and Imports say } 12	Clear- ing, say } 90	100
1870. Exports Imports	199 303								
Total	502	106	3,904	114	.128	40·00	Exports and Imports say } 12½	Clear- ing, say } 97	101
1871. Exports Imports	222 329								
Total	551	116	4,777	138	.115	42·12	Exports and Imports say } 13	Clear- ing, say } 113	106
1872. Exports Imports	255 353								
Total	608	129	5,903	171	.103	43·62	Exports and Imports say } 14	Clear- ing, say } 135	109

\* 1844, "Porter's Progress of the Nation," p. 356. For years 1868-71, "Statistical Abstract," 1872, p. 17, the exports of British produce only included, as more closely representing British trade than the total exports, which include foreign and colonial produce. 1872, from "Board of Trade Returns."

† The amount passed by the principal banking houses in London at the Clearing House, in 1839, is given as 941,401,600. ("Principles of Money," by John Wade, 1842, p. 79). As the statement is for 1839, and does not include the Bank of England nor the joint stock banks, nor all the private banks, a considerable increase is probable by 1844.

In 1844 the sums passed through the Clearing House cannot have been forty times the amount of the note circulation of the country; in 1872 they were a hundred and thirty-five times as large. From 1868 onwards the returns of the London Clearing House have been published. These returns, when compared with the exports and imports of the country, afford some very curious subjects for reflection. I have therefore tabulated them for the year 1844 and the years since 1868. Of the earlier year alone I have been able to obtain any information as regards the Clearing House returns till the year 1868, since which time the returns have been published. I was very desirous of obtaining the statements for the years since 1861, but I understand from Sir John Lubbock that no such record exists. It will be observed that the clearing increases in a more rapid proportion than the general trade of the country, as tested in this manner. I shall have occasion to refer to this point further on. It will be seen that while the exports and imports in 1844 were about three times the amount of the bank note currency, in 1872 they were fully fourteen times that amount. Judged by these standards the note circulation bears a far smaller proportion to the means of the country now than it did in 1844, and any slight increase or decrease in it, or in the demand for gold, might be expected to produce a far smaller influence on the money market now than then. But this is not entirely the case. In order to mark this more clearly I have constructed a table giving the total bank note circulation of the United Kingdom from the commencement of the year 1844 to the close of the year 1872. This table shows the effect of the Act of 1844 on the note circulation, and the alterations which have hence resulted in its composition.

This table of the note circulation of the country is a statement of the annual averages of each year as regards the Bank of England, the private and joint stock banks of England and Wales, the banks of Scotland, and those of Ireland. It is based for the years 1844-54 on the table given in "Tooke and Newmarch's History of 'Prices,'" vol. vi, p. 583. In that table the bank post bills are included in the circulation of the Bank of England. But I have deducted the amount of these bills, taking the average from the particulars given in the Appendix to the Report from the Select Committee on the Bank Acts, 1857. Such bills form no part of the paper circulation as understood by Sir R. Peel, who, in his speech in exposition of the principles of the Act of 1844, said, "I must state at the outset, that in using the word 'money' I mean to designate by that word the coin of the realm and promissory notes payable to bearer on demand. In using the word 'paper currency,' I mean only such promissory notes. I do not include in that term bills of exchange, or drafts on bankers, or other forms of credit."

TABLE 15.—*Bank Note Circulation of the United Kingdom, 1844-72. Statement of the Stock Banks of England and Wales, the Banks of Scotland and those of Ireland, in Percentages, and Proportions of the Circulation Regulated and Free under the Act of Average Rate of Discount, and the Number of Changes in Rate, in Cols. 22 and 23. The*

[0,000's omitted from this table in cols. referring

Year.	2	3	4	5	6	7	8	9	10	11	12
	Bank of England.			Private and Joint Stock Banks.			Total of England and Wales.	Total of Scotland.	Total of Ireland.	Total Circulation of United Kingdom.	Proportion of Total Circulation (Col. 11) to that in 1844. 1844=100.
	London	Branches.	Total.	Private.	Joint Stock.	Total.					
1844	£ 13,74	6,51	20,25	4,78	3,39	8,17	28,42	3,02	5,94	37,38	100
'45	13,60	7,13	20,73	4,51	3,19	7,70	28,43	3,29	6,95	38,67	103
1846	13,68	6,77	20,45	4,55	3,17	7,72	28,17	3,40	7,26	38,83	104
'47	12,71	6,53	19,24	4,54	3,09	7,63	26,87	3,55	6,01	36,43	97
'48	12,29	5,83	18,12	3,66	2,60	6,26	24,38	3,33	4,75	32,46	87
'49	12,59	5,90	18,49	3,56	2,63	6,19	24,68	3,22	4,23	32,13	86
'50	13,26	6,26	19,52	3,58	2,74	6,32	25,84	3,22	4,51	33,57	90
1851	13,11	6,42	19,53	3,46	2,74	6,20	25,73	3,24	4,46	33,43	89
'52	14,97	6,94	21,91	3,55	2,86	6,41	28,32	3,40	4,82	36,54	98
'53	14,87	7,81	22,68	3,80	3,05	6,85	29,53	3,80	5,65	38,98	104
'54	13,45	7,38	20,83	3,77	3,03	6,80	27,63	4,05	6,29	37,97	101
'55	12,76	7,04	19,80	3,83	3,05	6,85	26,65	4,10	6,36	37,11	99
1856	12,66	6,97	19,63	3,75	3,05	6,80	26,43	4,09	6,65	37,17	99
'57	12,47	7,00	19,47	3,62	3,01	6,63	26,10	4,05	6,82	36,97	99
'58	13,34	6,88	20,22	3,24	2,76	6,00	26,22	3,81	6,18	36,20	97
'59	13,66	7,66	21,32	3,44	2,99	6,43	27,75	4,11	6,87	38,73	103
'60	13,34	7,91	21,25	3,44	3,00	6,44	27,69	4,22	6,84	38,75	103
1861	12,62	7,39	20,01	3,22	2,89	6,11	26,12	4,20	6,26	36,58	98
'62	13,35	7,48	20,83	3,22	2,89	6,11	26,94	4,15	5,66	36,75	98
'63	13,24	7,44	20,68	3,14	2,88	6,02	26,70	4,20	5,40	36,30	97
'64	13,00	7,57	20,57	3,11	2,85	5,96	26,47	4,25	5,60	36,32	97
'65	13,37	7,72	21,09	2,95	2,85	5,80	26,89	4,38	5,98	37,25	99
1866	14,71	8,48	23,19	2,76	2,28	5,04	28,23	4,40	5,88	38,51	103
'67	14,85	8,61	23,46	2,73	2,30	5,03	28,49	4,57	5,81	38,87	104
'68	14,94	8,99	23,93	2,74	2,30	5,04	28,97	4,60	6,18	39,75	106
'69	14,59	8,86	23,45	2,73	2,33	5,06	28,51	4,73	6,61	39,85	106
'70	14,47	8,83	23,30	2,59	2,30	4,89	28,19	4,93	6,88	40,00	107
1871	—	—	24,41	2,68	2,31	4,99	29,40	5,11	7,55	42,06	112
72	—	—	25,54	2,70	2,39	5,09	30,63	5,32	7,67	43,62	117

Annual Averages of each Year as regards the Bank of England, the Private and Joint Cols. 2 to 11. The Proportion of Total Circulation to that in 1844, the Amounts, 1844, and the Position of the Scotch and Irish Circulations, Cols. 12 to 21. The Bank Annual Average Banking Reserve of the Bank of England in Col. 24.

to money, thus £20,25 (Col. 4) = £20,250,000.]

13	14	15	16	17	18	19	20	21	22	23	24
Total Circulation, Proportion Free.	Proportion of Free Circulation, Col. 13, to that in 1844. 1844=100.	Total Circulation. Proportion Regulated.	Proportion of Regulated Circulation, Col. 15, to that in 1844. 1844=100.	Per-cent-age of Free Proportion to Total	Per-cent-age of Regulated Proportion to Total.	Scotch over Limit, 1845.	Irish, over or below Limit, 1845.	Scotch or Irish, or both, over Limit, 1845.	Bank Average Rate of Discount.	Number of Changes in Bank Rate.	Average Banking Reserve of the Bank of England
£	£	£	£	£	£	£	£	£	£	£	£
17,13	100	20,25	100	46	54	—	—	—	—	1	8·50
17,13	100	21,54	106	45	55	.21.	+.60	.81	3	2	8·20
17,15	101	21,68	107	45	55	.32	-.91	1·23	3½	1	8·30
16,72	98	19,71	97	46	54	.47	-.34	.47	5	9	5·10
14,09	82	18,37	90	43	57	.25	-.160	.25	3½	3	9·60
13,50	79	18,63	72	42	58	.14	-.2·12	.14	3	1	10·70
13,91	81	19,66	97	42	58	.14	-.1·84	.14	2½	1	10·90
13,74	80	19,69	97	41	59	.16	-.1·89	.16	3	—	9·00
14,31	82	22,23	110	39	61	.32	-.1·53	.32	2	2	12·70
15,58	91	23,40	115	40	60	.72	-.70	.72	3½	6	8·80
16,17	94	21,80	107	43	57	.97	-.06	.97	5	2	7·20
16,28	95	20,83	103	44	56	1·02	+.01	1·03	4¾	8	8·40
16,23	95	20,94	103	44	56	1·01	+.30	1·31	5¾	8	5·70
16,06	93	20,91	103	43	57	.97	+.47	1·44	6¾	9	5·40
14,93	87	21,27	105	41	59	1·06	-.17	1·06	3½	6	12·10
15,53	90	23,20	114	40	60	1·36	+.52	1·88	2¾	5	11·10
15,54	90	23,21	114	40	60	1·47	+.49	1·96	4¼	11	8·40
15,12	88	21,46	106	41	59	1·45	-.09	1·45	5¼	11	7·50
14,52	85	22,23	110	39	61	1·40	-.69	1·40	2½	5	10·30
14,17	82	22,13	109	39	61	1·45	-.93	1·45	4½	12	8·50
14,31	84	22,01	109	39	61	1·50	-.75	1·50	7½	15	7·80
14,53	85	22,72	112	39	61	1·63	-.37	1·63	4¾	16	8·00
13,67	79	24,84	122	35	65	1·65	-.47	1·65	7	14	6·50
13,59	79	25,28	124	35	65	1·82	-.54	1·82	2½	3	12·70
13,97	81	25,78	127	35	65	1·85	-.17	1·85	2	2	11·50
14,16	82	25,69	127	36	64	1·98	+.26	2·24	3½	7	10·20
13,99	81	26,01	128	35	65	2·18	+.33	2·71	3	10	12·50
14,09	82	27,97	138	33	67	2·36	+.20	3·56	3	10	14·20
14,19	83	29,43	145	32	68	2·57	+.32	3·89	4¼	14	12·20

The bank post bills have, therefore, been excluded throughout. For the years 1855-70 the statements in the "Miscellaneous Statistics" have formed the basis. These at present extend only to the year 1867, and I am indebted to the courtesy of Mr. H. Reader Lack, of the Board of Trade, for the particulars for the years 1868-70. For the years 1871-72 the returns given in the "Bankers' Magazine" have been consulted.

We can trace by the aid of this table the general course of the note circulation in the United Kingdom from the year 1844 to the close of 1872. It will be observed that the note circulation has extended but little in total amount during that time, when compared with the great expansion in other departments of banking business, as shown in Paragraphs II, III, V, and XII, the amount of the note circulation (col. 11) being 37 millions in 1844, and 43 millions in 1872. The circulation in *gold* has increased probably as fast as the increase in retail trade and the total of wages. But the circulation in *notes* has increased very slowly indeed.\* The extension in the use of cheques for sums of 5*l.* and above has supplanted the use of notes. But the number of cheques under 5*l.* is so small as not materially to supplant the use of coin, which is chiefly used for retail trade and wages. And in the case of the country note circulation, as will be mentioned further on, the power of issue is to a great extent in the agricultural districts, where notes are now but little wanted, and comparatively less in the manufacturing and industrial districts, where such a note issue might be of service.

\* Mr. W. Langton, the Managing Director of the Manchester and Salford Bank, has been so good as to supply me with the following estimate of the proportion of cash payments to the total turnover of customers' accounts in his district. The amount of cash payments in it is very remarkable, and I believe that the proportion of coin in it very largely exceeds the average of England taken as a whole. It is to be remembered that the statement proceeds from a great wage-paying district. It is derived from returns obtained from two banks:—

		Per cent.
In 1859 the <i>cash</i> payments (coin and notes) were about 53 of the <i>total</i> turnover.		
" '64	"	42
" '72	"	32

In 1864 the coin was about 8 to 10 per cent. and the notes 92 to 90 per cent. of the total payments in cash.

In 1872 the coin was about 15 per cent. and the notes 85 per cent. of the total payments in cash.

The progressive decline in the use of notes thus indicated is remarkable. It is very desirable that careful returns of the amounts passed through the Manchester Clearing House should be published. It is only by analysing such statements that the movements of the circulating medium can be traced. The influence of the amount, and the manner of the payment of wages in this respect is very great. Mr. Langton informs me that "when one of our railways began to pay weekly "instead of fortnightly, we had to give them double the amount of silver, and "nearly double the amount of half-sovereigns that we had done previously."

It will be observed from this table that the total amount of notes in circulation bears no definite proportion to the average rate of discount. But though the total amount of the note circulation has increased only slightly since 1844, and in a far smaller proportion than the specie circulation, which, as just mentioned, has increased in the same time from about 36 to 105 millions, the composition of the note circulation has most materially altered. It will be observed that the country note circulation in England, cols. 5, 6, and 7, has steadily declined. Mr. Newmarch said, in 1854, "The col. 3 of the circulation of the *branches* of the Bank of England, " and the col. 7 of the total country circulation of England and " Wales, very closely balance each other. As the country cir- " culation has declined, the Branch Bank circulation has risen." It will be observed that this holds good to the present time. It will also be observed that the note circulation in Scotland, col. 9, has steadily and continuously increased beyond the limits fixed by the Act of 1845, and that the Irish circulation, col. 10, has likewise increased greatly beyond that limit during the last few years. The circulation of the Bank of England has also increased considerably, particularly in the provinces. The united effect of all these changes has been, that while the proportion of what may be termed the non-regulated note issue, cols. 13 and 14, of the United Kingdom generally has greatly diminished, that of the regulated issue, cols. 15 and 16, has greatly increased, and, as these movements have been in opposite directions, the proportion which the non-regulated bears to the regulated issue is far smaller now than in 1844, as is shown in cols. 17 and 18. By the non-regulated issue I mean that of the English country banks, whether joint stock or private, and also that of the Scotch and Irish banks, up to the limit fixed in 1845. Beyond that limit, cols. 19, 20, and 21, every note issued by the Scotch and Irish banks means, as is well known, a corresponding diminution in the reserve of the Bank of England. Bullion must be held against the excess exactly as it must be held against any excess of the notes of the Bank of England beyond the amount issued against securities. It will be observed that, corresponding in date with the contraction of the non-regulated, and the increase in the regulated issue of the United Kingdom taken as a whole, the number of alterations in the rate of discount, and the extent of the fluctuations in that rate, cols. 22 and 23, tend to augment.

This will be seen more clearly if the period from 1846 (the first year in which the principles of the Bank Regulation Act were observed throughout the United Kingdom) to 1872, is divided into groups of nine years each.

Years.	Non-Regulated Issue. Average for Nine Years (Col. 17).	Regulated Issue. Average for Nine Years (Col. 18).	Number of Changes in Rate (Col. 23).
	Proportion per cent.	Proportion per cent.	
1846-54 .....	42	58	25
'55-63 .....	41	59	63
'64-72 .....	35	65	91

It will be observed that the tendency to increase both in number and extent of fluctuation of the rate of discount, increases simultaneously with the decrease of the non-regulated circulation. I would carefully guard myself from saying that, because these events have occurred simultaneously, they have therefore a necessary and absolute connection with each other, and with no other points whatever. For other circumstances, as I shall proceed to state, and in particular the proportion of the banking reserves of the country, speaking generally, to the banking liabilities of the country, have contributed to this result. But the coincidence is remarkable, especially as the progressive increase is constant as far as the period of observation extends. The probability that greater and more rapid fluctuations in the rate of discount will ensue, should these alterations in the proportions of the note circulation continue to increase, cannot be doubted, in proportion as the influence of the note circulation on the banking reserve of the Bank of England increases.

Whatever connection now exists between the amount of notes in circulation and the rate of discount, arises from the connection between the note circulation and the banking reserve of the Bank of England. It is the proportion of the banking reserve to the liabilities of the Bank of England which, more than anything else, regulates the rate of discount. And in proportion as the note circulation affects the banking reserve it has an influence, and in no other way whatever. In no other direction can the note currency have any greater or less influence than a metallic currency would have. A completely metallic currency would be no safeguard against rapid and violent changes in the rate of discount. Of this we may see a proof in what has occurred at Hamburg, as I have mentioned in the description of the system of banking followed in that city, where a completely metallic currency, for such the Hamburg bank money really was, the whole amount of it being based on corresponding values of the precious metals, was no safeguard against the vehemence of the crisis of 1866. An illustration is likewise given in Table 15. It is while the note currency of the country generally has been approaching more nearly to the condition of a purely

metallic currency, that these fluctuations have become more vehement. This is in exact accordance with the opinion expressed by Mr. George Grote in his evidence before the Committee of 1832 on the Bank Charter. Lord Althorpe appears to have been the questioner.

Q. 4775. "Should you not, in the case of there being a purely metallic currency, anticipate very great fluctuations in the price of commodities, in the rate of exchanges, and in the rate of commercial discounts?"—"Yes; great fluctuations. I do not see that a metallic currency furnishes any security against them."

In Mr. Grote's opinion, therefore, no security from fluctuations is to be expected from causing a currency partly composed of bank notes and partly of coin, to be always of the same amount as a purely metallic currency would be. This was likewise the opinion of Mr. Tooke and of Mr. James Wilson. It is, indeed, obvious that it is not the currency itself which is the prime mover in these fluctuations. The cause is to be found in another direction. It will be seen indicated in the amount of the banking reserves. Meanwhile an increase rather than a diminution of the sensibility of the discount market is to be looked for. In the Scotch and Irish portions of the note circulation an increase, if they remain on their present footing, may be expected. That portion of their issues which is in 1*l.* notes, takes the place of sovereigns, and as the demand for coin increases with the increasing requirements of the country, the demand for 1*l.* notes also increases. An increase in the country circulation of the Bank of England is likewise probable. The Irish and Scotch circulations, when above the limit fixed in 1845, and the English country circulation, so far as that consists of Bank of England notes, press on the reserve of the Bank of England exactly as if the notes were so many sovereigns. These notes are the symbols of as many sovereigns removed from the Banking Reserve to the Issue Department. Hence a purely provincial and home demand operates in exactly a similar way as a demand for export induced by the state of the foreign exchanges. But it was to bring the note circulation into accordance with the demand indicated by the state of foreign exchanges that the Act of 1844 was framed. The state of the foreign exchanges has, however, less influence on the provincial demand for an increased circulating medium, than the state of the weather throughout the year. The influence of the weather on the harvest has a decided effect on the provincial note circulation, while the state of the foreign exchanges is absolutely unknown. The demand for Bank of England notes which accompanies the demand for gold referred to in Par. IX, as caused by the autumn requirements, is also now very large, and cannot be overlooked in any statement of this nature. All these demands

for foreign and for domestic requirements, though totally dissimilar in character, have now precisely the same effect on the Bank of England reserve. The close connection between the extent of the Scotch and Irish circulations and changes in the rate of discount at the Bank of England has frequently been noticed; another point which has not before been referred to may be mentioned here. The Scotch note circulation was observed by Mr. Gilbart to be at its maximum in November, being also high in May.\* The Bank of England rate of discount has reached its maximum, or been at that point nine times since the year 1844, in the months of May and November. The English country note circulation is usually high in April. The bank rate has never, since 1844, reached its maximum in April.

I desire to guard myself against being understood in any way to contend that the Bank Act of 1844 is responsible for any of the circumstances which led to any of the crises which have occurred since that date. I believe that one object of that Bill, "to maintain "and guarantee the convertibility of a paper currency into gold," as stated by Sir Robert Peel in 1848, has been as well obtained under it, as by any other measure which could have been framed at that time. Since 1844 the bullion in the Bank of England has never approached in any degree the low level at which it stood in 1839, and thus one great element of security has been gained. But the requirement which the Act of 1844 was designed to provide for, is no longer the main requirement. The Act of 1844 provided, and, generally speaking, admirably well, for the convertibility of the Bank of England note, but it left the banking reserve untouched and unstrengthened. The real paper circulation of the country is now no longer a note circulation but a cheque circulation, and it is now the banking reserve, the reserve which is to secure the ultimate convertibility of cheques, which requires attention. The method of carrying on business is, as I have shown, entirely altered since 1844, and the Act does not meet the difficulties of these times which were far less prominent then. In saying this I do not wish to be supposed to bring any charge against the management of the Bank of England. The Bank of England has maintained that proportion of reserve to liabilities which it has considered needful for its own protection. If, however, we look down col. 24 of Table 15, the column which contains the average banking reserve of the Bank of England, and compare it with col. 22 of the average rate of discount, we shall see that there is a very close connection between the two. This becomes even more obvious when we study the details. The space

\* Statistical Society's *Journal*, 1854, p. 297. These variations continue to the present time, and were ably commented on by Professor Jevons in the Society's *Journal* for 1866.

at my command renders this impossible; but the details will be found in a very careful paper on the Bank of England, published in the "Bankers' Magazine" for November, 1872, signed "N." If we also compare the amounts in col. 24 of Table 15, with the estimate of banking deposits in Par. XII, of banking reserves in Par. XIII, and the rates of progress of the crises in 1847, 1857, and 1866, described in Par. XIV, we can arrive at but one conclusion—that the banking reserves of the country have not expanded in proportion to the banking liabilities. An investigation of these statements will, however, also lead to the belief that a sufficient general banking reserve would not be one which it ought to be difficult to provide. The expense which such a reserve would entail, might be regarded in the light of an insurance on the safety of the business of the country. Considering the devastation which a crisis inflicts, the cost of such a reserve, if it were sufficient to mitigate the severity of a crisis, would probably be far smaller than the losses now experienced at such times. In times of pressure, I have always believed the saying of that most prudent statesman, the late Sir G. C. Lewis, to be correct, that "the Act of 1844 goes on for ten years "doing so much good, that you think, practically at least, nothing "can be better, and then for one week in ten years it on a sudden "works so much harm that you begin to doubt whether it is a good "Act after all." And I have watched from time to time, and with great regret, the operation of those minor provisions, which, dealing as they do with the provincial note circulation, appear to me entirely separable from the main intention of the Act, and far from beneficial in their working.\*

I cannot quit this part of the subject without expressing my complete concurrence in the opinion of the late Mr. James Wilson, expressed during the debate on the commercial crisis, 30th November, 1847, that "he believed the great error into which we had fallen was the confining our attention too much to the subject of circulation, and not directing it sufficiently to the subject of capital, capital being represented by the amount of the deposits in the hands of the bankers."

By "circulation" Mr. Wilson meant, of course, the note circu-

\* I do not intend to say that in the year 1844 I had, or was competent to have, a distinct opinion on these points, but I well remember that about that period I was staying with those friends with whom I was afterwards associated in business, and who are all now gathered to their rest; and I remember well the one of them (the late Mr. John Brightwen), who was the most competent to give an opinion, saying to me, that he considered the result of these alterations would, as their influence extended more and more, tend more and more to increase and augment the numbers of the changes in the Bank rate of discount. His words, as well as I can remember them, were, "Watch it, and you will see." I think the results bear out the anticipations of his long tried sagacity.

lation, which, as shown in Table 14, now forms but a very small part of the circulating medium of the country. The real circulating medium, in the sense of the movement of money, is now no longer in notes, nor even in bills as much, proportionally, as it has been, but in cheques. The circulation of bills is now smaller in proportion to the amount of banking capital than it was twenty years ago. And, as far as I can ascertain, at an earlier period still, bills formed a considerably larger part of the circulating medium. We thus see how one method of transacting business succeeds to another. At the earliest period notes were found most convenient; and at an early period also, bills. Both in their turn become to a great extent superseded, in proportion as the modern system of deposit banking extends. As deposits enlarge, and the use of cheques, by which deposits are put into circulation, enlarges also, it is to this portion of the circulating medium that attention should now be directed; taking care, however, not to lose sight of the subject as a whole.

#### IX.—*The Bank Notes Issue Bill, proposed in 1865, and the English Country Note Circulation.*

The proposed legislation of 1865 had but little to recommend it. It presented rather the appearance of an Act of Parliament prepared to meet a particular difficulty, than a well-considered scheme of national legislation.

The most useful provisions proposed at that time were those in Clause 5, which allowed the number of partners to be increased beyond that of six, and permitted a bank of issue to have a London office without, as at present, forfeiting the right to issue notes; and also that one in Clause 6 which permitted the transfer of the right of issue from one bank of issue to another bank of issue. The points which appeared to me the most objectionable, as I understood the proposed Act at the time, and since, were—

I. That the power to receive a transfer of the right of issue was limited to those banks which possessed the right in 1844. The result of this would have been to prevent the right of issue from being moved to those banks, and to those parts of the country which require it the most. I shall recur to this point further on.

II. That this privilege was to be further confined to those banks which agreed to pay an increased percentage on the circulation. As some banks would have been certain to have continued their note issue under the provision of the Act of 1844, which only levied a duty of 7s. per cent. on it, this would have caused the circulation to be issued under two different arrangements, instead of one broad principle.

III. That this right of issue was limited to a period of less

than ten years. This allowed so short a time for the privilege of issue as practically to render it almost worthless.

IV. That the percentage of duty proposed to be paid was too high. The percentage was at first put at 45*s.* per cent., afterwards 25*s.* per cent. was proposed. The reason for the selection of these rates was a good deal discussed at the time. I remember pointing out, in a letter to the Committee of issuing country bankers at the time, that Mr. Gladstone might have been guided by the following reasons in proposing the rate of 45*s.* per cent.

The amount of the issue of the Bank of England against Government securities, directed by the Act of 1844, was 14 millions. The profit on that amount was estimated—

£	
At 3 per cent. per annum .....	420,000
From this profit the following deductions were to be made—	
Cost of circulation .....	117,000
Commission 1 <i>s.</i> to other banks issuing } Bank of England notes .....	24,000
Stamp Office (composition for duty).....	60,000
Payment for charter .....	120,000
	<u>321,000</u>
Leaving for profit .....	99,000
If the profit were assumed as, above, at 3 <i>l.</i> per cent.....	420,000
A deduction made from it of 45 <i>s.</i> per cent. would } have been .....	315,000
Leaving for profit .....	105,000

The close approximation of these figures led me to think that this was the basis of the calculations followed. The rate of 25*s.* per cent. appeared to me to have been based on the following calculation:—

£	
From the payments stated as above .....	321,000
There was probably deducted in making the calculation—	
The cost of the circulation .....	117,000
And the commission to other banks .....	24,000
	<u>141,000</u>
Leaving the payments for the charter and the } composition to the Stamp Office .....	180,000

As a tax of 25*s.* per cent. on an assumed profit of 420,000*l.* would have amounted to 175,000*l.*, it does not seem improbable that Mr. Gladstone may have taken the 180,000*l.* paid by the Bank of England for the two heads above-mentioned, as the ground for proposing this charge.

It is evident, however, that even this reduced charge of 25*s.* per

cent. was too high a proportion to levy on the issue of country bankers, who have no exclusive privileges like the Bank of England, and that therefore the payment "for the charter" should have been left out of the account. If this were deducted, the rate of duty on the country issue, to correspond with the 60,000*l.* paid by the Bank of England to the Stamp Office, would be below 10*s.* per cent. The existing rate of 7*s.* per cent. may therefore be taken to be a very fair one.

V. That the existing arrangements as to licences for compounding for the issue of notes and short bills (not exceeding twenty-one days' date and three days' sight) were to be continued.

The manner in which the licence duty is levied at present has a tendency to fetter country bankers very much. A payment of 30*l.* a-year for the privilege of compounding for the issuing notes and short bills, is much too high a tax for a branch bank to pay in a small place. The whole profits from such a bank must be very small. A payment of 5*l.* a-year would be quite sufficient, and I believe that the revenue would be a gainer by the change.

VI. That security was not required for the circulation.

Sir D. Salomons proposed as an amendment, "That previous to "any bank of issue having a house of business or establishment as "bankers in London, or at any place not exceeding sixty-five miles "from London, such bank shall deposit with the Commissioners of "the National Debt an amount of exchequer bills or other Govern- "ment securities equal to its maximum authorised issues, to be "retained by the said Commissioners so long as such bank shall "continue a bank of issue with a house of business or establishment "in London, or within sixty-five miles thereof."

This amendment would not, however, as it stood, apparently, have entitled the holders of notes, against which such securities had been deposited, to have demanded payment from this source in case any default had been made by the issuer. And it is not easy to see why such a provision should have been confined to the banks within sixty-five miles of London.

It has appeared to me, in thinking the matter over, that it would now be desirable to unite the existing country circulation in one total, that the part of it which the Act of 1865 was intended to restore, should be restored, and that security should be given for the whole. It would be quite feasible to combine this with the preservation of the rights of issue at present exercised, and to make arrangements for cashing the country notes in gold or in Bank of England notes at various banking offices throughout the provinces. I do not propose to give further details here. The arrangement might be carried out in various ways, and would, I believe, be of great service to all concerned. There is a very apposite remark of

Mr. Huskisson's, which I may quote: "Of a paper currency there are two sorts, the one resting upon *confidence*, the other on "*authority*." I believe that the country note circulation thus regulated, endorsed, as it would be, by first-rate names, backed by ample securities, and convertible with readiness, would rest on the best foundations a paper circulation can rest on, and would possess the well-deserved confidence of the public. I believe that this paper currency would be found to vary only as a paper currency should vary—according to the requirements of the country, and that the adopting it would, in conjunction with a modification of the existing regulations as to holding gold against the excess of the Scotch and Irish circulation beyond the limits of 1845, cause a great mitigation of the autumnal drain for gold and bank notes. This regularly recurring demand, swelled as it is by two opposing yet concurrent influences, the autumnal holidays and the autumnal expansion of business, becomes every year more formidable in its extent. Every year the stream appears to extend, and the current to flow stronger. I quote from the "Times" a statement, supplied by Mr. John Newton, of the extent of these requirements, and I cannot but believe that as they do not represent a drain induced by the state of the foreign exchanges, but merely a demand occasioned by domestic wants, they would be, to a great extent at least, completely and effectually met by a note circulation designed for domestic use:—

"The following figures\* give the approximate amount of gold taken into provincial circulation during the continuance of these summer and autumn drains upon the Bank for the last five years, of course after making the needful allowances for the bullion operations reported on foreign account:—

Periods and Dates of Bank Returns.						Amount of Coin taken into Circulation.
						£
20 weeks from and including 3rd July to 13th November, 1872 ....						4,495,000
19 " 5th "	8th	"	"	"	'71 ....	4,674,000
20 " 6th "	16th	"	"	"	'70 ....	3,740,000
19 " 7th "	10th	"	"	"	'69 ....	2,806,000
20 " 1st "	11th	"	"	"	'68 ....	4,000,000

#### X.—*Fluctuations in the English Country Note Circulation in 1847, 1857, and 1866.*

While dealing with this part of the subject, there may arise in the minds of some a remembrance of a speech made by Mr. Gladstone in 1866, in which he asked, "What part has been played during this period by the country bank circulation? Had it been found available for the wants of the country? There has been an

\* From the "Times," 4th December, 1872.

"immense demand for notes and coin. If the country bank circulation had been in a satisfactory state, it is evident that not only the notes and coins of the Bank of England, but those of the country banks themselves would have been largely drawn upon. Instead of that, however, we have actually seen the country bank circulation diminished by not less than a million at the very time of this drain upon the Bank of England." The same results are also stated to have been exhibited in the crises of 1847 and 1857. On examining into this point, I find that the drop in the circulation referred to by Mr. Gladstone took place between April or early May and August. The figures are as follows:—

*Total of Issues of Notes, Private and Joint Stock Banks in England.*

1866.	£
7th April .....	5,632,710
12th May .....	5,568,744
25th August.....	4,639,955

The drop is nearly a million. The question is, whether this contraction in the circulation was due to panic alone, or whether any other causes had any influence on it. There are several points to be considered. As is well known to every provincial banker, there takes place usually, though certainly not to the full extent occurring in 1866, a drop in the circulation between May and August in every year. If we refer to Professor Jevons' paper on the pressure in the money market (*Journal of the Statistical Society*, 1866) we shall find there the extent of the ordinary average diminution carefully tabulated.\* The 6th of May may be taken as occurring in the eighteenth or nineteenth week of the year, the 5th of August in the thirty-first or thirty-second. The figures are as follows, and represent the average variations from week to week of the note circulation of the English private and joint stock banks, 1845-62:—

*Average Circulation.*

[0,000's omitted, thus £6,92 = £6,920,000.]

	£		£
In the 18th week .....	6,92	In the 19th week .....	6,90
," 31st ,," .....	6,37	," 32nd ,," .....	6,35
Diminution .....	<u>55</u>	Diminution .....	<u>55</u>

\* This is also clearly indicated to the eye in Professor Jevons' very careful diagram showing all the weekly accounts of the Bank of England, the state of the circulation, and the Bank minimum rate of discount for the years 1844-64 inclusive, published by Edward Stanford.

The actual amounts were as follows, from 1855 to 1864:—

TABLE 16.—*Total Country Bank Note Circulation in England, Compared in the First Week of the Months of May and August, 1855-64 inclusive.*

From the statements in the “Miscellaneous Statistics.”

			Less in August than in May.
		£	£
1855.....{	5th May .....	7,076,197	
	4th August .....	<u>6,524,189</u>	552,000
1856.....{	3rd May .....	7,073,262	
	2nd August .....	<u>6,544,615</u>	528,647
1857.....{	2nd May .....	6,978,696	
	6th August .....	<u>6,365,263</u>	613,433
1858.....{	1st May.....	6,236,523	
	7th August .....	<u>5,801,968</u>	434,555
1859.....{	7th May .....	6,608,263	
	6th August .....	<u>6,199,901</u>	408,362
1860.....{	5th May .....	6,613,742	
	4th August .....	<u>6,302,371</u>	311,371
1861.....{	4th May .....	6,321,784	
	3rd August .....	<u>5,683,793</u>	637,991
1862.....{	3rd May .....	6,369,507	
	2nd August .....	<u>5,797,498</u>	572,009
1863.....{	2nd May .....	6,261,475	
	8th August .....	<u>5,772,951</u>	488,524
1864.....{	7th May .....	6,312,837	
	6th August .....	<u>5,864,744</u>	448,093
			4,994,993

*Note.*—Average of ten years, 499,500*l.* diminution in August as compared with May.

Showing an average diminution of about half a million. To that extent, therefore, the decrease in the country note circulation was doubtless due to the ordinary course of events operating that year as well as other years, and causing the circulation to vary in obedience to the ordinary requirements of the country. Another event also influenced the country note circulation in 1866. It was the year during which the National Provincial Bank was discontinuing its issues.

	£
On the 7th April these were .....	102,770
„ 12th May „ .....	81,323
„ 28th August „ .....	43,447

A further diminution of nearly 60,000*l.* is, therefore, owing to this cause. This, added to the ordinary periodic contraction of about half a million, satisfactorily accounts for nearly 600,000*l.* out of the 1,000,000*l.* referred to by Mr. Gladstone. Nor did the circulation of the Bank of England remain at its maximum during the whole of the period under notice.

If we look to the circulation of the Bank of England, we shall find it to be as follows:—

<i>Bank of England Circulation.</i>	
1866.	£
4th April	22,332,615
16th May	26,120,995
29th August	23,898,510

Here again Professor Jevons' tables will assist us to a correct understanding of the question. The Bank of England circulation is at least as high in the thirty-fifth week as in the fourteenth week of the year—the weeks most closely corresponding to 4th April and 29th August—usually there is a small rise in the circulation of the latter week as compared with the earlier. There is in 1866 a very great expansion between 4th April and 16th May, corresponding to the requirements of the crisis; but if we take the circulation as between 16th May and 29th August, there is a diminution of more than two millions. There is little or no doubt that the sudden rise in the circulation of the Bank of England during May, 1866, amounting to nearly four millions, was owing to the desire of the bankers generally to keep strong reserves of "legal tender" money at hand. Bank notes, being more portable than gold, were preferred by many bankers. An analysis of the returns obtained by Sir D. Salomons of the various denominations of notes issued, shows that of the rise of 3,800,000*l.* between the 4th April and the 16th May, 1866, only 1,400,000*l.* was in 5*l.* and 10*l.* notes, the remainder, 2,400,000*l.*, was in notes varying in size from 20*l.* to 1,000*l.*, the descriptions which are principally kept in reserve by bankers. It is hence probable that a very small increase indeed took place in the circulating medium in a strict sense at that time. Hence, a comparison between the Bank of England and the country bank note circulation at that period proves very little as to the real position of the issuers of these notes.

We will now consider the contraction of the circulation during the pressure in 1847 and 1857. The main fall in the issue of the private and joint stock banks in 1847 and 1857 took place between

the early part of October and the end of each year, and was as follows:—

*Total of Issues of Notes.—Private and Joint Stock Banks in England.*

1847.	£	1857.	£
2nd October .....	7,558,245	3rd October .....	6,952,915
18th December .....	5,903,554	26th December .....	5,450,153
Diminution .....	<u>1,654,691</u>	Diminution .....	<u>1,502,761</u>

Professor Jevons' tables inform us that the—

*Average Circulation of the Private and Joint Stock Banks, England,*

[0,000's omitted, thus £6,98 = £6,980,000.]

	£		£
In the 41st week is .....	6,98	In the 42nd week is .....	7,06
" 51st " .....	<u>6,41</u>	" 52nd " .....	<u>6,41</u>
Average diminution.....	<u>57</u>	Average diminution.....	<u>65</u>

Hence the usual diminution at that time of the year is about 600,000*l.*

To this extent, therefore, the contraction is due to the ordinary causes in operation.

The circulation of the Bank of England was, at the same dates—

1847.	£	1857.	£
2nd October .....	19,577,278	3rd October .....	19,947,275
18th December .....	18,615,039	23rd December .....	19,257,120
Diminution .....	<u>962,239</u>	Diminution .....	<u>690,155</u>

This drop is rather less than what Professor Jevons' tables might lead us to expect, but the bank note circulation is influenced by the quarterly payments on account of the Government to such an extent, that a comparison between it and the issues of the other banks is of less use as a guide when these periods intervene. I have, however, been able to show that a very considerable portion of the diminution in the country note issues was due to ordinary causes, while the circulation of the Bank of England fell at times when, from the remarks made, one would have expected to find an increase in it instead of a diminution. It is desirable, also, to mention that if this drop in the note circulation of the country banks is taken to denote a diminution of confidence in them, that point is by no means clearly proved. Accurate statements, not only of the amounts of deposits held, but of the position of the overdrawn accounts, would be needed to show whether this was the case. A high premium is offered at all periods of pressure for the reduction of the circulation through the rate of interest allowed on deposits, and the enhanced charges on

overdrawn accounts. Through these means an influence is exerted which accounts for a considerable portion of the diminution of the provincial note circulation at all times when the rate of interest is high.

It is obvious that a great part of the contraction in the country note circulation in 1847, 1857, and 1866 was due to the ordinary causes which lead to a contraction at certain periods of the year, and that another, and a very important, influence in causing the diminution, was the high rate of interest prevailing at the time.

**XI.—The English Country Note Circulation, within and beyond the Sixty-Five Mile Circle round London, and in the Agricultural and Industrial Districts of the Country.**

The extremely local nature of the existing country note circulation, the small amount of each individual authorised issue, and the manner in which the averages of the issue are compelled to be taken under the Act of 1844, all tend to cause the amount of notes actually in circulation to be considerably below the limits permitted.

I have classified the issues of the various English banks according to the amounts of each issue in December, 1872. By the following table we see how small the individual issue of most of these banks is—

**TABLE 17.—Classification of the Issuing Banks: Designed to Show that a Large Proportion of these Banks Issue Individually to a Small Amount only. Amounts in Circulation, December, 1872; the Total Average Circulation of that Month was 5,141,989*l.***

Thousands.	Number of Banks.	Thousands.	Number of Banks.
Under 1 .....	1	Over 25 and below 26 .....	1
Over 1 and below 2 .....	1	„ 26 „ „ 27 .....	2
„ 2 „ „ 3 .....	6	„ 27 „ „ 28 .....	3
„ 3 „ „ 4 .....	2	„ 28 „ „ 29 .....	4
„ 4 „ „ 5 .....	3	„ 29 „ „ 30 .....	2
„ 5 „ „ 6 .....	7	„ 30 „ „ 35 .....	13
„ 6 „ „ 7 .....	5	„ 35 „ „ 40 .....	9
„ 7 „ „ 8 .....	5	„ 40 „ „ 45 .....	5
„ 8 „ „ 9 .....	4	„ 45 „ „ 50 .....	8
„ 9 „ „ 10 .....	10	„ 50 „ „ 55 .....	4
„ 10 „ „ 11 .....	3	„ 55 „ „ 60 .....	3
„ 11 „ „ 12 .....	9	„ 60 „ „ 65 .....	1
„ 12 „ „ 13 .....	4	„ 65 „ „ 70 .....	2
„ 13 „ „ 14 .....	5	„ 70 „ „ 75 .....	3
„ 14 „ „ 15 .....	6	„ 75 „ „ 80 .....	—
„ 15 „ „ 16 .....	—	„ 80 „ „ 85 .....	3
„ 16 „ „ 17 .....	2	„ 85 „ „ 90 .....	—
„ 17 „ „ 18 .....	3	„ 90 „ „ 95 .....	3
„ 18 „ „ 19 .....	5	„ 95 „ „ 100 .....	—
„ 19 „ „ 20 .....	9	„ 100 „ „ 150 .....	3
„ 20 „ „ 21 .....	3	„ 150 „ „ 200 .....	—
„ 21 „ „ 22 .....	4	„ 200 „ „ 250 .....	—
„ 22 „ „ 23 .....	4	„ 250 „ „ 300 .....	1
„ 23 „ „ 24 .....	2		
„ 24 „ „ 25 .....	3	Issuing banks in all .....	176

Within the limit of a circle of sixty-five miles from London there is no joint stock bank of issue, nor any branch of the Bank of England; and here no less than forty of the one hundred and twenty private banks which have the right of issue are situated. Classifying the country circulation according to this division, we find in December, 1872—

		£
40 private banks within the circle authorised to issue .....		1,203,517
80       ,,      beyond                     ,,       ,,		<u>2,747,492</u>
		3,951,009
56 joint stock                     ,,       ,,		<u>2,738,640</u>
		6,689,649

But the amounts actually in circulation differ very considerably from those that are authorised. They are as follows. The average for 1870, and the amount actually in circulation on the 30th November, 1872, are given for the purpose of comparison:—

	Actual Issue.	Below Limit.
		£
40 Private banks within the circle—		
Average, 1870.....	623,946	579,571
30th November, 1872.....	658,238	545,279
80 Private banks beyond the circle—		
Average, 1870.....	1,962,269	785,223
30th November, 1872 .....	2,021,999	725,493
56 Joint stock, all beyond the circle—		
Average, 1870.....	2,298,345	440,295
30th November, 1872 .....	2,365,404	373,236

The total circulation according to this division was—

		Average, 1870.	30th November, 1872.
		£	£
Within the circle .....		623,946	658,238
Beyond       ,,      .....		4,260,614	4,387,403
		4,884,560	5,045,641

The issue within the sixty-five mile circle has diminished since 1844 more rapidly than that beyond.

In 1844, Sir Robert Peel mentioned in his speech on the 6th of May, introducing the resolutions on which the Bank Act was subsequently framed, that the circulation of country notes was—

£			
Within the sixty-five mile circle .....	1,329,477		
Beyond           ,"	6,728,497		
	<hr/>	<hr/>	<hr/>
	8,057,974		

In 1853, Mr. Gilbart stated that in the year 1853, for the months of April, August, and October, the circulation was as follows:—

	Authorised Circulation.	Actual Circulation.		
		April.	August.	October.
		£	£	£
Within the circle.....	1,303,318	1,010,932	940,184	984,581
Beyond    ,,     .....	6,639,148	5,984,749	5,642,739	5,905,257
	7,942,466	6,995,681	6,582,923	6,889,838

In round numbers, the circulation within the sixty-five mile circle was—

In 1844 .....	.....	½th
,, '53 .....	.....	⅓th
,, '72 .....	.....	⅔th

of the whole circulation. Hence it is obvious that nearness or distance from London has, as might be expected, a great influence on the amount of the circulation. It will be observed, also, that it is the actual issue rather than the power of issuing, which has diminished within the sixty-five mile circle. The diminution is probably rather to be attributed to the increased facilities for communication, and to the alteration in the circumstances of the district, than to any other cause. In 1844, and even in 1853, railways were comparatively few, and many places, comparatively close to London, preserved the character of rural districts; now every town within fifty or sixty miles of the metropolis is practically a suburb of London. The notes are less required, and stay out a shorter time. The use of cheques also tends greatly to economise the use of notes. If we make another division of England, and separate the agricultural counties from the remainder of the country, we find that the power of circulation also lies principally in the agricultural districts, where the Act of 1844 found it and left it, and where the notes are no longer so much needed. As noticed in the "Quarterly Review" for July, 1847: "The distribution of the greatest masses of the provincial circulation, "so far from being coincident with the districts of greatest population, greatest trade, and greatest activity and enterprise, is in "point of fact, coincident with the districts where population and "trade are alike of the most stationary character."

On analysing the average issue for 1870, and dividing it between the agricultural and industrial districts of England, on the basis given in the census of 1861, I find that in the agricultural districts the issues are, in proportion, more below the authorised issue than in the industrial. It has not seemed necessary to give each individual issue. The general results are as follows:—

	Authorised Issue.	Average Issue, 1870.
	£	£
Agricultural counties	3,041,829	2,049,099
Industrial   ,     ....	3,647,799	2,835,440
	6,689,628	4,884,539

This shows that if the unused power of issue were removed from those districts where it is no longer needed, to those in which industry is more active, the amount actually in circulation would correspond more nearly to the authorised issue. This analysis of the country note circulation is given here, as it may enable those unacquainted with the subject to understand its practical working more clearly.

## XII.—General Observations on the Present Position of Banking in the United Kingdom, and Comparison with Earlier Periods.

Having thus surveyed the principal divisions of the United Kingdom, we may make a general recapitulation. This will be as follows:—

	£
English bankers generally, total resources .....	451 millions
Two-fifths of deposits of discount houses .....	32     ,,
	483     ,,
Scotch banks .....	92     ,,
Irish   ,     .....	41     ,,
	616     ,,
Foreign and British Colonial banks having } offices in London .....	152     ,,
	768*     ,,

\* The amounts with savings banks in the United Kingdom at the same date were—

Trustees savings banks .....	39 millions.
Post office .....	17     ,,
	56

making with the sums above mentioned 824 millions.

We can now compare this statement with the position of matters in 1851. At that time, as Mr. Newmarch informs us, there were in England and Wales, exclusive of London, "about 900 bank offices—not separate banking firms, but 900 places where the business of banking, either by means of a central office, or a branch office, is daily carried on. After considerable inquiry and reflection, I believe that, one with another, the amount of capital of all kinds employed by these 900 bank offices is certainly as much as 100,000*l.* each. When I say capital of all kinds, I mean the private capital of the partners and shareholders of the banks invested in their business; the capital placed in the banks by depositors, and by those who keep banking accounts, and the capital acquired by means of the circulation of country bank notes."

Mr. Newmarch's general estimate of the position of affairs in 1851, was as follows :—\*

*Capital Wielded by Country Banks.*

	£
900 { bank offices in England and Wales at about 100,000 <i>l.</i> each, or, say .....	97,000,000
360 bank offices in Scotland at about 100,000 <i>l.</i> each, or, say ....	<u>36,000,000</u>
<hr/>	
1,260	133,000,000
170 bank offices in Ireland at about 100,000 <i>l.</i> each, or, say.....	<u>17,000,000</u>
<hr/>	
1,430	150,000,000

*Capital Wielded by London Bankers.*

35 city bankers (private and joint stock) 1½ million each.....	44,000,000
16 west end .....	20,000,000
Bank of England .....	12,000,000
,, .....	24,000,000
	<u>36,000,000</u>
Insurance offices, &c., deposits with bill brokers.....	10,000,000
	<u>260,000,000</u>

This is perhaps the earliest, certainly the most accurate, estimate existing of the state of affairs in past years.

There is no similar estimate in Porter's "Progress of the Nation," nor in the portion of the "History of Prices" written by Mr. Tooke, nor can I find in any work on banking any earlier statement. I have made investigations in other directions, in the Report and Evidence of the Committees of the House of Commons on the Bank Charter, 1832; on Commercial Distress, 1847; on the Bank Act, 1857, and elsewhere; but I cannot find any indication, except a rough estimate in a pamphlet published by Effingham

\* Statistical Society's *Journal*, vol. xiv., pp. 166—173.

Wilson, in 1834. In this the deposits of the London bankers are calculated as being—

In the city .....	15 millions
„ west end .....	9 „
Private deposits at Bank of England	5½ „
Total .....	29½ „

From this a sum of 3 millions is deducted as belonging to country bankers, leaving  $26\frac{1}{2}$  millions for London deposits. There is also a calculation made by Mr. J. G. Hubbard, for the date 1832-41, that the deposits held by country bankers were not less than from 16 to 20 millions,\* which I believe to have been very considerably below the mark; and another, probably far nearer the real state of the case, given by the late Mr. James Wilson in his speech during the debate on the commercial crisis in 1847, in which he reckoned the total number of banks in the United Kingdom at 1,600, and their deposits at from 200 to 250 millions.

As these are very general statements, I have to take 1851 as the starting point for this inquiry. The vast extension of business since that date is most surprising. It will be better to add (that it may correspond with the present one) to Mr. Newmarch's estimate of—

260 millions	
the 25 „	belonging to the foreign and colonial banks in 1851
285† „	

By comparing this estimate with that of 768 millions held at the present time, we can see how extremely the conditions of the business have altered during the last twenty years. In the course of my observations on the note circulation, I have shown, by a comparison of the rate of increase in the amounts of exports and imports combined and that of the amounts passed through the Clearing House, that the rapidity with which money circulates is infinitely greater now than it was in 1844. I have shown also that the rate of progress is continuous since 1868, the earliest period to which the published returns of the Clearing House extend. The great significance of this rapid increase in circulation is very obvious, as is also the influence which it may exert in any future period of pressure. It is now desirable to endeavour to investigate the amount of cash held in reserve to meet these very considerable liabilities.

\* "Report from the Select Committee on Bank Acts, 1857," Appendix, p. 11.

† We must bear in mind the 30 millions of savings bank money at that date, making in all 315 millions.

### XIII.—*Banking Reserves.*

I should have felt an almost insuperable difficulty in approaching this part of the question had it not been that a very unusual prominence has recently been given to it. In November last Mr. Thomson Hankey, one of the most assiduous and best known of the directors of the Bank of England, wrote a letter to the "Times" inviting attention to the subject.

Mr. Hankey stated :—

" The principle on which banking is carried on in London is the employment of deposits in what are ordinarily called good banking securities, such as bills of exchange, short loans, and Government stocks, to such an extent as it is believed may confidently be relied on as the minimum amount that will always be left in hand, reserving always, however, a fair margin, adequate and even more than adequate to meet any unusual withdrawal of such deposits. But few bankers would deny that the sudden withdrawal of one-third of their deposits can only be met by a sudden realisation of assets usually employed profitably in banking investments. So it would be with the Bank of England—the sudden withdrawal of the balances of the London bankers could only be met by an adequate realisation of banking assets, of which, however, the Bank has always an available amount."

Sir John Lubbock, in commenting on this letter, remarked that—" The total reserve of the Bank of England was, according to the account of the 7th instant, 9,000,000*l.*, against 25,000,000*l.* of deposits. Mr. Hankey estimates, however, in his letter, that the London bankers' balances are one-third of the whole deposits held by the Bank. Hence, as one-third of 25,000,000*l.* is 8,300,000*l.*, it follows that while the whole reserve held by the Bank of England is 9,000,000*l.*, no less than 8,300,000*l.* is due to the other London bankers."\*

Other estimates have been made, of these some were smaller. We may accept Sir John Lubbock's estimate as a probable amount, especially as being made by one who is himself interested in the matter. It appears to me to be the natural inference from Mr. Hankey's letter. We will proceed to consider the amount of cash probably kept in hand and at call.

In some of the many banking balance sheets which I have

\* A letter to the "Economist" of 1867, p. 1217, signed "Δ," shows the form which the accounts of the Bank of England would take if the balances belonging to other banks were deducted from the deposits, and a corresponding deduction made from the coin and bullion in hand. If the accounts were made out in the form proposed in this letter, it would at once become obvious how small the actual specie reserve is, and that the bankers' balances might, at certain times, exceed the total amount of the banking reserve.

examined in preparing the groundwork of this statement, the amount of cash in hand is stated separately, but in most it is mixed together with money held at call, and investments in Government securities. Such assets as the last-named two, immediately or at least very readily available, strengthen very greatly the security of a bank. The proportion of the sums so held to deposits and acceptances varies from 15 to 40 per cent. An average of from 25 to, say, 30 per cent. of the liabilities held in ready money cannot be considered other than a very fair proportion. But can these assets be all regarded as strictly cash? Mr. Hankey obviously thinks that they cannot. He would define cash to be either Bank of England notes or gold. It may seem at first sight almost impossible to ascertain with any degree of accuracy what proportion of the assets of bankers are held in that shape. One feels inclined to wish that the statements of our bankers were made out in the form employed in Sweden, as then this point would always be accurately known. The subject is so important that I have inserted one of the quarterly statements published in Sweden in the part of the paper devoted to that country, and as statements of sums in foreign money may not be generally intelligible, I have reduced the amounts to English money. The amounts held in money, notes of the Riksbank (Bank of Sweden), and on running accounts with the Riksbank, are given in cols. 27 and 28 of Table 20. The proportion of Riksmynt (legal tender money) held to notes in circulation is given in col. 1 of Table 19. But though it may not be possible, except in the case of the Scotch and Irish banks, to approach a similar exactness of statement for the United Kingdom, I think we may form some idea of the limits within which the amount of cash held must be bounded. We will commence with what is known on the subject; that is, with the cash held by the Scotch and Irish banks.

The amount of coin held by the Scotch and Irish issuing banks is published with the returns of their note circulation. The average amount held for the year 1872 was about 6 millions and a half. Those banks only which are banks of circulation are included in the returns. There were open in the course of 1872 about 813 bank offices in Scotland, and about 309 in Ireland to which the returns refer. The 6 millions and a half of gold and silver coin apportioned equally among these 1,120 bank offices would not average so much as 6,000*l.* to a banking office. I understand that but few Bank of England notes are held by the Scotch banks, and I believe few only in Ireland. Bank of England notes are not at present legal tender in either country. We hardly need, therefore, to make any allowance for the Bank of England notes held by these banks, and may believe 6,000*l.* cash on an average for an office

to be rather over the mark. Then the question is, how much is held in England? I have made every inquiry possible, and I am told that the average is probably greater in Scotland and Ireland than in England. But I can hardly believe this, when the requirements of English business are remembered. There are in England about 1,680 bank offices in London and the provinces. Taking these at the Scotch and Irish average, their united holdings would be about 10 millions of gold and Bank of England notes. Besides these amounts there are the deposits of the London bankers with the Bank of England. These, as the "Economist" newspaper continually reminds us, are the ultimate reserves of all British and Irish bankers. If we assume Sir John Lubbock's calculations to be correct, and take these deposits at about 8 millions, we arrive at the following estimate:—

Cash and Bank of England notes held by English banks, estimate	10 millions
"	Scotch and Irish, say
"	6 "
Deposits of bankers with Bank of England, estimate	8 "
	—
	24 "
	—

It must be clearly understood that this estimate is of the total reserve in actual money. A little consideration may assist us to see whether the estimate is extravagant or not. The Bank of England circulation may be spoken of, in general terms, as 25 millions.

£	
10 per cent. on this would be.....	2,500,000
15                   ,, <span style="color: red;">15,000</span> .....	3,750,000

If we think the first amount a probable proportion of the circulation of the Bank of England to be dormant on an average in the tills of the bankers generally, and then consider it possible that they might, one with another, hold three times as much specie as bank notes, we shall be led to believe the estimate of 10 millions for the banks in England not an extravagant one.

Assuming, then, 25 millions as the probable amount, the first impression will be, this is a large sum—equal to the whole average circulation of the Bank of England. A reserve, however, of whatever amount it may be in itself, can only be considered large in proportion to the liabilities against which it is held. In endeavouring to estimate these liabilities we are met with two difficulties. In the first place, we scarcely know what the amount for England is, still less what the English liabilities of the foreign and colonial banks are, or what proportion of these latter may be likely to press on the English banking reserves.

I have endeavoured to frame a probable estimate, based on the most recent statements. It is as follows, 12th March, 1873:—\*

Deposits of Bank of England, say .....	34	millions
Proportion of circulation, including bank post bills, } not covered by bullion, say ..... }	$\frac{1}{2}$	"
Liabilities of London banks .....	179	
,, provincial ,, .....	210	
	<u>389</u>	
Deduct for capitals employed, partly estimated .....	54	
	<u>335</u>	"
Discount houses, two-fifths of deposits, say .....	32	"
Liabilities of Scotch banks, including circulation .....	82	"
,, Irish .....	$34\frac{1}{2}$	"
	<u>518</u>	"
Foreign and colonial banks, liabilities 120 millions, } say, 15 per cent. of these † .....	18	"
	<u>536‡</u>	"

If we draw the line after the English, Scotch, and Irish banks, the total money reserve will be something like 5 per cent. If we include, as I think we should do, some portion of the savings bank money, and of the liabilities of the foreign and colonial banks, like the proportion indicated, the reserve will be about 4 per cent. The first is a twentieth; the second is a twenty-fifth of the liabilities.

It is probable that the improvements in the Clearing House, and the admission of the London Joint Stock Banks to that establishment, arranged in the course of 1853 and 1854, have occasioned a diminution in the amount of bank notes held by London bankers. A considerable diminution of the highest class of notes (500*l.* to 1,000*l.*) was observed at that time.—“History of Prices,” Tooke and Newmarch, vol. vi, p. 559.

\* As the deposits are high at this date, it may be as well to give the averages for some years past:—

Deposits of Bank of England, average of ten years, say $25\frac{1}{2}$ millions		
Proportion of circulation not covered by bullion, } average of ten years .....	5	"

† While this statement is passing through the press, I have observed that Mr. Hamilton, chairman of the Bank of Australasia, mentioned at the annual meeting of that bank, on 24th March, that about  $12\frac{1}{2}$  per cent. of the banking resources of Australia were held in this country. This statement supports my estimate of 15 per cent. very strongly, as in making it I had considered it likely that the conditions of Australian business would cause a smaller proportion of Australian banking resources to be held in this country than of the other colonies. The Australian amounts are about one-third of the whole.

‡ The 56 millions of savings bank money must not be altogether lost sight of in this part of the question. When these sums are added to the figures given above, the total amounts to 592 millions.

A distinct decrease in the London portion of the circulation of the Bank of England, probably attributable to this cause, took place about that date. The effect can be traced from the year 1854, onwards, in Table 15, col. 2, which gives the London circulation of the Bank of England. The Bank of England circulation, as will be seen by that table, did not, for fully twelve years, rise again to the amount at which it had stood in 1853. The average of the sums paid in bank notes during 1839, in settling the clearings of that date, was rather more than 200,000*l.*—“Principles of Money,” by John Wade, 1842, p. 79. If the Clearing House settlements had been paid in the same manner in 1872, the proportional amount of bank notes required would have been more than 1,250,000*l.* The amounts which would have been required in notes are now included in the balance of the London banks with the Bank of England.

In preparing this paper, I have had occasion to refer frequently to the collected series of the “Economist” newspaper, now by far the most valuable, indeed, almost the only considerable storehouse of historical business information on these points. After making this estimate, I found one in the volume for 1866 which will show that, while the “Economist” estimate is that the money reserve may be 5 per cent. of the liabilities, their estimate of those liabilities at that date is very considerably below mine at the present time.

The estimate forms part of a comparison between English and American banking, and commences with a statement, that on the 15th of February, 1866, the Bank of England held in cash  $3\frac{3}{4}$  per cent. of its liabilities. “But these reserves, especially that of the “Bank of England, are the banking reserves of the whole country.” “The amount of specie held in the tills of the London and provincial “banks of this country is a trifle in proportion to the liabilities; it “is not regulated by those liabilities; it is simply the ready money “of the day. The reserve in the Bank of England . . . . . “ought to be measured by its proportion, not to the liabilities of the “Bank of England only, but to the liabilities of the other banks in “England; we do not know these liabilities, and, therefore, cannot “make the comparison. But when we consider that the liabilities “of three banks only—the London and Westminster, the Union, “and the London Joint Stock—amount to 56,000,000*l.*, while those “of the Bank of England, circulation included, are only 42,000,000*l.*, “we can frame some idea of the vast masses of credit which in “England are secured by that single reserve in the Bank of “England . . . . . if the English banks were thrown “together, we doubt if they would hold 5 per cent.”

The estimate of the liabilities is contained in one of three very noteworthy articles on the monetary crisis of 1866, communicated to the “Economist” in the course of that year (1st September,

1866). The writer has been referring to the growth of the system of encouraging deposits by interest allowed on fixed sums for fixed periods.

" The effects of deposit-banking must necessarily be enormous, " when it is considered that the sum thus held in London probably " amounts to 150 millions, and in the British Islands must exceed " 300, and perhaps reaches 400 millions.

" The advantages of deposit-banking are great. Through its " means an infinity of small sums, some of which would probably " never exist, and others would be wasted without this ready means " of employing them, are collected and utilized. Important objects " of industry are fed with capital, and the general progress of the " country is no doubt greatly promoted.

" On the other hand the system of deposit-banking, as now " carried on, especially in London, the great centre of all monetary " transactions, involves a most formidable risk.

" It is impossible to regard without alarm the possibility of a " fearful catastrophe, when one contemplates the gigantic sums held " practically at call in London, and the insignificant amount of " reserve provided to meet it. How short an access of discredit " would prostrate the edifice, whose superstructure is so vast, while " the foundations are so feeble!"—"Economist." 1st September 1866, p. 1027.

In fact, looking back to 1844, while the reserve of coin and notes (*i.e.* of gold) in the banking department of the Bank of England has increased but slightly, on an average of ten years, since that date,\* the trade of the country has increased enormously, and the conditions of that trade have materially altered. Any ebb or flow in the demands of trade (home or foreign) affects the reserve, therefore, much more largely than it used to do. The annual average of the banking reserve is given in Table 15, col. 24; it will be observed that the amounts for the last six years show an increase which it is to be hoped may be maintained. That the reserve is insufficient to the total demands which may now be made on it, is not the fault of the Bank of England. It is the result of requirements gradually and continuously outgrowing the arrangements which at one time were more nearly adequate to the purpose. Nearly ten years before 1866, in 1857, a "Banker," writing to the "Economist" newspaper on the insufficiency of the Bank reserve, dwelt most strongly on the necessity of a larger amount being kept available for immediate wants. Commenting on the rapidity with

\* The average for the—

Ten years 1845-54 was .....	$9\frac{1}{2}$ millions.
,,     '63-72    ,, .....	$10\frac{1}{2}$ ,,

which, in 1857, the Bank reserve was reduced between the 19th of September, when it was more than one-third, and the 11th of November, when it was less than one-eighteenth of the deposits, he said, "I do not see how to resist the conclusion from these figures "that we ought to keep at a higher amount in ordinary times a "reserve which may be diminished with such startling rapidity."\*

I may also quote the opinion of Mr. W. Fowler, given in his pamphlet on the crisis of 1866 :—"We are gradually being taught "the importance of a sufficient reserve in an available shape; and "the anxieties of the present year will not, I think, have been incurred "in vain, if the attention of the public is drawn to the need that "exists of larger and more numerous reserves, and to the danger of "a general reliance being placed on one establishment."

Swift as was the march of events in 1847 and 1857—in 1866 (as shown in the next paragraph) it was swifter still, and it cannot be doubted that another crisis, when it comes, will, unless proper steps are taken to counteract its inevitable effects, move onwards with even greater and more terrible speed.

I have preferred, in dealing with this most important subject—that of the due proportion of reserve to be held to liabilities—to quote the writings and opinions of others. Their judgments will have a great and well-deserved weight, far greater than any words of mine can have. But it will be a source of satisfaction to me if the collection of those opinions in this place has any effect in causing the subject to be considered, and the banking system of the country to be strengthened and perfected.

#### XIV.—*On a Crisis in the Money Market.*

It is now possible for us, after considering the statements made in the preceding pages, to arrive at a distinct idea of the causes which drove the last crisis on with such terrible speed.

The "Economist" newspaper, 19th August, 1866, published a statement showing the relative changes in the accounts of the Bank of England in 1847, 1857, and 1866. This points out how much greater the demands for assistance on the Bank of England were in the later than in either of the earlier years, and with what rapidity they were made.

\* The "Economist," 1857, p. 1317.

TABLE 18.—*Account showing the Amount of the Circulation of Notes, Amount of Deposits, Securities, Bullion, and of Reserve of Notes held by the Bank, also the Minimum Bank Rate of Discount at the undermentioned Periods.*

[000's omitted,—thus £19,577, = £19,577,000.]

Week ending	Notes in Circulation.	Public Deposits.	Other Deposits.	Public Securities.	Other Securities.	Bullion.	Reserve of Notes.	Minimum Rate of Discount.
1847.	£	£	£	£	£	£	£	per cent.
2nd Oct. ....	19,577,	9,329,	7,961,	11,661,	21,259,	8,565,	3,409,	5½
9th " ....	19,503,	9,414,	7,713,	11,426,	21,437,	8,408,	3,321,	—
16th " ....	20,263,	5,496,	8,674,	11,088,	18,963,	8,430,	2,630,	—
23rd " ....	21,265,	4,766,	8,580,	10,899,	19,467,	8,312,	1,547,	8
30th " ....	21,764,	4,696,	8,911,	10,613,	20,409,	8,438,	1,176,	—
6th Nov....	21,318,	4,991,	8,804,	10,598,	19,919,	8,729,	2,030,	—
13th " ....	20,934,	5,991,	8,312,	10,583,	19,560,	9,258,	2,797,	—
20th " ....	20,179,	7,219,	7,866,	10,633,	18,791,	10,016,	4,228,	7
27th " ....	19,860,	7,729,	8,238,	10,946,	18,531,	10,532,	4,986,	—
4th Dec. ....	19,668,	7,799,	8,441,	10,946,	18,070,	11,032,	5,583,	6
11th " ....	19,182,	8,229,	8,437,	10,946,	17,630,	11,426,	6,448,	—
18th " ....	18,615,	8,763,	8,606,	10,998,	17,158,	11,991,	7,551,	—
25th " ....	18,630,	9,235,	8,243,	11,065,	16,979,	12,236,	7,786,	5
1857.								
3rd Oct. ....	20,824,	8,243,	10,002,	10,593,	21,835,	10,662,	4,606,	5½
10th " ....	20,862,	8,502,	9,667,	10,560,	22,398,	10,109,	4,024,	6
17th " ....	21,052,	4,833,	11,132,	10,254,	20,539,	9,524,	3,217,	7
24th " ....	20,585,	4,861,	11,263,	10,254,	20,404,	9,369,	3,485,	8
31st " ....	21,184,	5,160,	11,489,	10,254,	22,197,	8,731,	2,258,	—
7th Nov....	21,079,	4,871,	11,910,	10,120,	22,628,	8,497,	2,155,	9
14th " ....	21,036,	5,314,	12,935,	9,444,	26,113,	7,170,	957,	10
21st " ....	22,235,	5,483,	13,959,	6,407,	30,299,	6,484,	1,148,	—
28th " ....	22,156,	5,788,	14,951,	5,807,	31,350,	7,263,	1,918,	—
5th Dec. ....	21,943,	6,072,	14,436,	5,441,	31,191,	7,356,	2,268,	—
12th " ....	20,953,	6,648,	14,440,	5,434,	30,111,	8,069,	3,900,	—
19th " ....	20,537,	6,944,	15,077,	5,446,	29,264,	9,450,	5,757,	—
26th " ....	20,133,	7,428,	15,151,	5,492,	28,088,	10,753,	7,426,	8
1866.								
25th April....	22,588,	4,417,	13,294,	10,694,	18,507,	13,855,	5,844,	6
2nd May ....	23,309,	4,922,	13,587,	10,694,	20,380,	13,509,	4,839,	7
9th " ....	22,806,	5,781,	13,515,	10,894,	20,844,	13,156,	4,950,	9
16th " ....	26,650,	5,936,	18,620,	10,837,	30,943,	12,328,	730,	10

Note.—Taken from the “Economist,” 19th May, 1866, p. 586.

From this statement we see that the reserve of the Bank of England was, in round numbers, before the period of pressure actually arrived—

	£
In 1847 .....	3,400,000
„ '57 .....	4,600,000
„ '66 .....	5,800,000

But while in 1847 the pressure lasted about a month, and in 1857 rather longer, before reaching the maximum; in 1866 one week was sufficient to reduce the reserve from nearly five millions to less than one.

It is clear, by a comparison between the data given by Mr. Newmarch in 1851, and those which I have obtained, that the circumstances under which business is carried on are very different now, from those existing at any former period.

They may be briefly summed up thus:—

A vast increase in the amount of deposits, larger than the proportional increase in the capital employed in the banks which obtain these deposits.

Greater rapidity in the circulation of money. The Clearing House returns prove this.

A larger and increasing quantity of foreign bills on this country, causing a greater danger, should a demand for gold for export arise in periods of pressure.

A stationary banking reserve; one even decreasing in proportion to the business done.

I have shown by the tables of the circulation of foreign bills how great a difference there is between the proportions of bills drawn by foreign countries *on* this country, and those drawn on foreign countries *by* this country. This difference, it will be observed, enlarges and increases continually; it must tend, at all times, to cause greater fluctuations in the Bank rate of discount, and presents a new source of danger to the banking institutions of this country in times of pressure, especially in the case of a foreign demand for bullion. The holding, and equally the owning, so large a number of bills on England must always give foreign nations a great power over our money market. The current must always have a tendency to flow outwards. It is obvious that the efforts of the Bank of England to turn the exchanges in favour of this country must hence continually meet with a strong and formidable element of opposition. The importance of the subject has been noticed in several papers read before the Society. Attention has also been directed to the point from other quarters, and with the great increase in the number of foreign banks which have branches in this country, it rises into considerable and increasing importance from the need of providing sufficient reserves to meet the requirements thus occasioned.

It is much to be desired that, before the recurrence of another period of pressure, a careful and complete investigation into the position of affairs should take place. I have endeavoured to give in these pages a faithful outline of the principal features of the case,

but though I have made every effort in my power to obtain correct information, and have been seconded beyond my utmost anticipations by the willing assistance of those whom I have consulted, yet the subject is beyond the powers of any one person, and requires a very complete investigation. This, it is to be hoped, may be made before the approach of the next period of pressure. When such times arrive there is no leisure for inquiry. When the period of difficulty is passed, as the proverb reminds us, it is soon forgotten. The interval of comparative ease is the best time for investigation. Every effort to prevent such a misfortune as a crisis deserves the best assistance of those interested in business pursuits. There are some who speak of panics and crises in a tone almost of levity, as of storms needed to clear the air. This can scarcely be a right feeling for any who have actual experience in these matters. Those who have witnessed, even from a position of safety, the sufferings undergone in such seasons of pressure, will know how necessary it is to endeavour to prevent, if not their recurrence, at least their violence, how desirable it would be to mitigate the misery they inflict. The same careful and prudent judgment which has characterised the conduct of English banking business generally, might surely arrange for some general supervision by which reckless speculation might be nipped in the bud, and incipient over-trading and accommodation transactions rooted out, before they have risen to a height which endangers the rest of the community.

The extreme measures which have been required since the Act of 1844, point out of themselves the necessity for some reform. Three times in twenty-eight years it has been needful to give permission for the suspension of that Act which forms the very foundation of the monetary system of this country. A law can hardly retain the respect of the community when it becomes needful to suspend its operation so frequently. It is regulation, not repression, that is required. The monetary system of this country is now so entirely artificial that it cannot safely be left unregarded.

May we learn a lesson from the experience of a people who depend for their very existence on the careful regulation of natural forces. Entirely artificial as the monetary system is in this country—and by artificial I mean dependent on book credits—it is not more artificial than the water system in Holland. The whole safety of that country depends on a careful regulation of dykes, sluices, and canals. Above the place where the two great branches of the Rhine separate, those branches which, under the names of the Waal and the Lek, contribute generally so much to the prosperity, while at times (when in flood) they are the terror of the Dutch, the care of that prudent people provided many years since, a safety valve against times of overwhelming pressure, in a dam carried across a

disused and ancient channel of the Rhine. When the waters of that mighty river reach a fixed point at the gauge at Arnheim, a convention with the German Government provides that this dam may be cut. The sacrifice of property would be immense, the extent of country devastated almost beyond belief; but Holland has never hesitated to make any sacrifice needed for the safety of her people. Such, however, has been the skill of the Dutch engineers, so carefully have they adjusted the needed strength of dyke and jetty to the power of the furious stream, the needed extent of sluice to provide an outlet for the accumulated waters, that the contingency has never arisen. It has never been found necessary to cut through that great rampart. The regulation of the current has been complete.

The regulation of the currency of England projected in 1844, has not, hitherto, been equally successful. The complete additional stability then desired to be obtained, has not been obtained. But while the Dutch have had to contend with a current, the force of which, though fluctuating continually in extent, was always calculable within certain limits; we, on the contrary, have had to deal with a stream ever deepening, ever broadening, increasing alike in volume, and in velocity of flow. What we need is a bulwark which shall possess, besides sufficient strength to resist, some power of adjustment to the vehemence of the pressure which may be brought against it. Then, and then only, when such a bulwark has been provided, when such a method of adjustment has been secured, can we expect the stream of our commerce to flow smoothly, whatever proportions it may attain.

#### XV.—*Banking in Sweden.*

I now proceed to the investigation of the methods of banking in those countries which I propose to compare with our own. There is much useful information to be obtained from observing the practice of other nations, though the circumstances under which banking is carried on, and the character of the business among them, may be in many respects different from those which prevail among us. The first of these countries is Sweden.

It has been aptly observed by Sir John Lubbock, of one of the northern kingdoms, in his work on "Prehistoric Times," that it occupies a larger space in history than on the map of Europe. The same remark applies to Sweden, by far the most important member of the Scandinavian brotherhood of peoples. Sweden may truly boast to have been on several occasions in advance of the remainder of Europe, in the reduction to practice of the ideas of modern civilisation. As the Society is well aware, through the very careful paper of Mr. Frederick Hendriks, on the vital statistics of Sweden,

the earliest European census, as well as the first accurate tables of serial events, were made in that country. In banking also, Sweden was amongst the earliest nations in perceiving the wants of the time. The use of the bank note in Europe is a Swedish invention. The first bank was founded in Sweden in 1656 by a Swede named Palmstruck. This was nearly forty years earlier than the Bank of England (founded in 1694). The first bank note was issued in 1658. An "enquête," made by the French Government in 1729, recognises the priority of Sweden in this matter, and declares the bank note to be an admirable Swedish invention, designed to facilitate commerce. Palmstruck, like Paterson, was ill-used and driven away, but his bank became the Riksbank (Bank of Sweden) in 1668. This bank still exists, and has always been national property. Though the foundation of the Banks of Venice, Genoa, Amsterdam, and Hamburg is earlier in date, yet they were hardly banks in the same sense as that of Sweden, which was the first institution by which banking, as at present understood, was carried on. In more recent times Sweden, like Scotland, has owed, and owes much of its prosperity to the system of banking established in the country.

I have been so fortunate as to have the materials for this portion of my paper supplied me by M. Wallenberg, the eminent banker of Stockholm, and I am thus able to give a complete description of a very remarkable system of banking hitherto but little known among us. The Swedish banking law has appeared to me so important, that I have added a translation of the Act of 1864, under which the existing banking system of the country is carried on. The provisions of this statute, which owes much of its completeness to the care which M. Wallenberg, who is himself a member of the Swedish Legislature, bestowed on it, are most minute, and admirably calculated to found and preserve thoroughly good and sound methods of banking. The enactments (in sec. 2) compelling, before any bank can be founded, the number of persons associated in the first instance to be not less than thirty, must prevent the introduction of bubble companies. The provision in sec. 5, which forbids any shareholder from retiring from the company during the term of the charter (which runs for ten years), unless with the consent of the annual meeting; and that one also in sec. 6, which compels the names to and from which every transfer of shares passes, to be registered in the proper superior court of law, and also advertised in the newspapers, after the consent of the annual meeting of the Company to the transfer has been obtained, appear most completely contrived to prevent the jobbing in bank shares which has been so great a misfortune in England. Mr. Leeman's bill was designed to prevent this kind of traffic, but it is obvious that the constitution of

the Swedish banks provides a corrective of a far more efficacious description. At the same time it is very unlikely that this provision, which renders the form of association more like a private partnership than a joint stock company, would operate to the prejudice of any shareholder desiring to sell the shares of a really sound concern. Local buyers of shares of companies in good repute in their own neighbourhoods, will often give high prices for purposes of investment when they are satisfied that the companies are in good working order. The high prices at which shares of water, gas, and insurance companies will frequently sell in England, in their own localities, afford a proof, if any were needed, that the values of such shares depend on the reputation in which the concerns are held, and not on the facility for transfer alone. The length of time during which a shareholder may be compelled to remain connected with a company, is likely to induce caution in his mind before he joins it. A shareholder, under such circumstances, is also likely to be greatly interested in promoting prudence in the management of the company. He cannot transfer his liability at a moment's notice. No man is likely hastily to enter into an engagement which may last for ten years; especially if it is one from which he can in no case be freed except by a resolution formally passed by his copartners. The public notice in the newspapers would also at once draw attention to the fact that a very wealthy or very prominent shareholder in a company had disposed of his interest in it. The whole of the provisions of the Swedish banking law deserve careful attention. They appear remarkably well designed to create and promote a sound method of carrying on business. The Swedish system is the Scotch system, developed and arranged to suit the requirements of the country into which it has been imported. It possesses the best features of the Scotch method, while adapting it to the wants of a country perhaps less richly endowed by nature, certainly far more sparsely peopled than Scotland.

The Swedish monetary circulation consists mainly of silver and of notes issued by the Riksbank (Bank of Sweden) and by the "Enskilda" banks. The latter banks are considered private banks. They are rather to be regarded as large private partnerships, including a great number of members, than as joint stock institutions according to English ideas; the arrangements appear to combine the best features of both systems of partnership. The first "Enskilda" bank dates from 1830, but it was with the establishment in 1856 of the "Enskilda Bank of Stockholm," of which M. Wallenberg was the founder, that the present method of carrying on business was adopted. During the long period of forty-two years, not one "Enskilda" bank has either failed, or suspended payment for a single day. Like the Scotch, the Swedish banks

include small notes in their issues. The values of the notes are as follows :—

Riks Dollars.	English Money. £ s. d.
5 say .....	— 5 6
10 „ .....	— 11 1
50 „ .....	2 15 6
100 „ .....	5 11 2
500 „ .....	27 15 6

The amount of notes in circulation is very large, when the sparseness and condition of the population are taken into consideration.

The total issues on 30th June, 1872, were—

	£
For the "Enskilda" banks .....	2,984,974
„ Riksbank .....	<u>1,812,552</u>
	4,797,526

The population of Sweden is given in the "Statistisk Tidskrift" as being 4,168,525 in 1870. The note circulation is therefore fully 1*l.* a-head for the population; as the notes are entirely free and payable in silver on presentation, this is a very remarkable instance of the extent which a note issue based, to use Mr. Huskisson's words, "on confidence," may attain in a thinly-peopled country.\*

The credit in which this note circulation is held stands (and justly) so high that there is no part of the country in which the most illiterate peasant will not readily receive the notes, even when issued at the other end of the kingdom. All the "Enskilda" banks are bound by law to cash their notes either in silver or in notes of the Riksbank at their head office. For their own convenience they exchange notes at Stockholm, as that city is the centre of the Swedish money market. Hence a country bank

\* It is probable that a Scandinavian union for an international coinage between Sweden, Norway, and Denmark, will shortly be carried out upon the same principles, as regards interchangeability of coin in each country, as those which distinguish the Monetary Convention of December, 1865, at present in force between France, Italy, Switzerland, Belgium, &c. Gold will then become the standard of these countries. A complete description of the proposed international coinage in Scandinavia will be found in a letter from Mr. Frederick Hendriks to the "Economist" of 2nd November, 1872. It is to be regretted that Mr. Hendriks' labours in behalf of international coinage have not received the attention they deserve. His evidence before the *Enquête sur la question monétaire*, held in Paris in 1870, is a very powerful exposition of a difficult technical subject, in a foreign language. The object desired appears at the present time further off attainment even than then. The recent arrangements of the new gold coinage in Germany are likely to impose new difficulties in the way of any extended international coinage, from the fact that the values of this fresh and large gold coinage will not tally with any of the units at present in use in any of the larger coinage systems.

note issued at 700 or 800 miles distance, is as readily taken anywhere as the bank note issued next door, for the holder is perfectly certain that the next person to whom he has a payment to make, will receive the note without any demur. The credit of the note circulation is maintained by the careful superintendence over the banking system exacted by the laws of the country, and in particular by that provision made in sec. 26 of the Swedish statute law on banking, which compels a certain proportion of the capital of each bank to be invested in sound securities before any bank can issue a single note, and which also provides that every note shall be paid on presentation, either in the current coin of the country or the notes of the Riksbank. The principle on which this enactment proceeds is that any Enskilda bank may issue notes up to—

Three-quarters of its capital ;

The cash in hand and the *balance* in its favour at the Riksbank, this balance being regarded as the equivalent of coin ; and the amount of cash credit securities which it holds.

The amount of notes, however, which may be issued, against the last-named securities, is not allowed to exceed one-half of the paid capital. The securities deposited as the basis of the note circulation have to be of a very solid character, either the funded debt of Sweden, or mortgages on landed property not exceeding two-thirds of the value at which it is taxed (this is generally low), and mortgages on house property in towns, within half the value at which it is insured against fire. These securities are deposited under the supervision of a Commissioner appointed by the Governor of the Province. The guarantees thus given for the note circulation are very substantial. It is distinctly to be understood that the system is one of guarantees given. The securities are held for the due performance of the contract ; they are not in any way coined into paper money. The regulation of the currency is effectually provided for by the fact that every note is payable in coin, or the legal tender notes of the country, the circulation of which, as will be seen in Table 23, containing the balance sheet of the Riksbank, is largely based on the precious metals. As Mr. Tooke clearly pointed out in the fourth volume of his "History of Prices," a currency, when convertible on demand, cannot be in excess of the requirements of the country in which it is issued. The advantages of such a facility of note circulation is of especial benefit to a population like that of Sweden, so large a proportion of which lives either sparsely scattered over the provinces, or in towns separated at a great distance from each other. The economy in the wear and tear of the coin thus superseded is considerable, while a tangible and very great advantage to the inhabitants arises from the fact that in consequence of the use made of the note circulation, any sum of money is transmitted from one part of

the country to another, without charge. Drafts on demand for any sums required are issued by all the "Enskilda" banks. These banks are enabled to do this, as the drafts can be readily cashed at any branch bank with their own notes. The banks can thus compete successfully with the post office in the transmission of money from one place to another. In Great Britain and Ireland, on the contrary, bankers are compelled either to stamp each draft, or to pay a heavy sum for licence and composition duty. These charges compel bankers' drafts to be issued at a date, usually seven, ten, or fourteen days' date. This delay, though short, acts as a bar to the freedom of circulation, and enables the British Government, through the post office, to compete successfully and increasingly with bankers, in what is a most legitimate part of their business.

It is obvious, also, that this privilege of a note circulation must in Sweden, as in Scotland, conduce to the advantage of the customer, as well as of the shareholder of the bank. A source of profit is opened out by which the cost of the charges of the bank in the conduct of its business must be materially lightened. The average note circulation in Sweden has rather declined of late; and if the progress of banking in that country corresponds to its early history in England, and in Ireland, it is probable that the note circulation will continue in some degree to decline, in proportion as the inhabitants become familiarised with the advantage of keeping accounts with a bank, and thus learn, by the use of cheques, to economise the note circulation.

The cash credits, and the current accounts, are conducted as in Scotland. The banks charge  $\frac{1}{2}$  or 1 per cent. commission on the amount of a cash credit granted for a year. This charge is a commission on the amount of credit allowed, not on the debit cast of the account, which of course is generally many times larger. This arrangement is in some respects preferable to the plan of making a charge on the actual "turn over" of an account—a plan which has a tendency to restrict the amount of transactions between a customer and his banker.

The Swedish banks do not allow overdrawn accounts. The advance must be on a cash credit. Interest is allowed at  $2, 2\frac{1}{2}$ , and 3 per cent. on money standing on current accounts. On deposits the interest is in proportion to the time for which the sum is deposited, either at one, three, or more months' notice. These rates are such as to induce depositors to prefer the longer periods. It is a great advantage to a bank at a time of pressure, to have a considerable proportion of its liabilities in a form which does not require immediate attention. The particulars of the rates allowed, and also of the charges, will be found in Table 21. A complete abstract of the position of the banks of Sweden will be found in Tables 19 and 20.

TABLE 19.—*Quarterly Statement, 30th June, 1872,*

Banks.	Proportion of Riksmynt held to Notes in Circulation.	1	2	3	4	5	6	7
		Circulation.		Due.				
		Own Notes.	Bank Post Bills.	On Running Accounts		On Deposit Accounts.		
		£	£	Number.	Amount.	Number.	Amount.	
1. Skånes .....	.38	471,464	—	1,167	165,186	4,917	770,798	
2. Wermlands .....	.46	98,717	11,219	288	44,923	840	91,978	
3. Kopparbergs.....	.29	133,316	4,429	169	24,922	1,044	76,102	
4. Östergötlands .....	.80	67,701	11,246	220	22,450	1,006	106,963	
5. Smålands .....	.66	165,330	24,447	334	39,368	847	149,026	
6. Örebro .....	.54	154,996	12,333	322	54,200	699	97,956	
7. Mälareprovinsernas	.62	308,757	11,301	426	54,052	1,595	275,779	
8. Göteborgs .....	.51	151,888	9,094	391	124,019	765	174,316	
9. Stockholms .....	1.04	89,598	14,493	1,381	140,726	6,601	710,544	
10. Norrköpings .....	.59	132,054	15,205	283	49,039	1,721	171,980	
11. Wadstena .....	1.15	37,173	6,322	116	30,624	1,024	75,283	
12. Hallands .....	.47	42,795	8,416	72	8,127	423	24,029	
13. Sundsvalls .....	.66	200,919	9,325	253	39,367	636	100,493	
14. Christianstads .....	.26	116,961	4,087	274	26,612	1,337	190,832	
15. Wenersborgs .....	.34	43,861	6,575	176	21,158	844	66,258	
16. Skaraborgs .....	.80	85,784	—	337	29,775	1,708	107,575	
17. Gefleborgs.....	.49	120,535	9,873	273	47,663	680	122,120	
18. Uplands .....	.63	95,106	2,221	435	30,906	3,551	200,986	
19. Westerbottens .....	.49	118,495	8,116	102	17,122	272	43,279	
20. Christinehamns ....	.38	56,589	2,067	129	12,837	330	48,100	
21. Borås.....	.34	28,996	—	141	11,758	384	55,011	
22. Södermanlands ...	.48	36,844	4,935	205	21,660	619	60,202	
23. Calmar .....	.28	78,506	—	143	20,848	745	64,764	
24. Gotlands .....	.13	24,790	4,451	63	6,133	262	25,679	
25. Bohus läns .....	.27	22,740	—	52	5,363	115	20,954	
26. Hernösands .....	.41	101,058	1,979	56	8,766	477	49,082	
Total.....	.52	2,984,974	182,133	7,808	1,057,602	33,442	3,880,091	

Note —The riks dollar riksmynt

## the Liabilities of the Swedish "Enskilda" Banks.

8	9	10	11	12	13	14	15	16
		Due.		Amount of Surplus Account.				Highest Allowed Amount of Bank Notes not in Circulation.
Borrowed at interest.	Balance of Accounts with other Banks.	Balance of Other Accounts.	Capital.	Reserve Fund.	Undivided Profits from the preceding Years.	Total.	Amount of Cash Credits Granted.	
£	£	£	£	£	£	£	£	£
—	1,753	60,053	360,844	46,513	857	1,877,468	350,533	59,323
—	310	6,551	105,750	5,556	1,932	366,936	84,122	20,825
—	—	6,798	86,567	2,503	3,463	338,100	111,167	3,682
—	—	1,087	75,756	3,591	1,667	290,460	95,664	27,749
—	883	2,609	171,333	3,968	3,427	560,392	217,958	71,525
—	71	3,444	111,111	2,108	4,758	440,976	122,028	12,000
—	—	54,782	182,667	9,862	4,279	901,480	229,667	20,097
27,778	46,732	39,418	166,667	10,709	44	750,664	185,378	48,152
3,682	168,647	15,938	55,556	31,196	33,119	1,263,498	265,983	72,948
—	11,433	6,724	88,889	3,837	1,389	480,550	124,889	25,958
—	685	931	55,556	2,020	—	208,593	60,983	43,344
—	6,723	861	55,556	944	856	148,308	60,217	14,963
33,333	—	28,759	63,889	5,556	2,490	484,131	91,889	10,733
5,556	13,963	4,388	111,111	7,625	—	481,135	120,228	14,031
8,333	3,235	2,047	80,278	4,346	—	236,091	65,492	41,809
—	—	5,460	55,556	2,330	1,889	288,368	88,744	30,374
—	—	4,394	83,333	5,162	556	393,636	88,522	6,559
—	18	6,106	55,556	4,167	2,075	397,141	98,861	10,191
—	—	1,918	94,444	5,556	1,298	290,228	35,450	3,784
8,333	79	4,111	68,889	1,366	2,497	204,868	71,656	8,456
5,556	3,720	5,363	55,556	2,093	—	168,052	56,356	14,266
—	—	1,516	56,500	1,764	146	183,567	59,094	19,763
16,667	4,419	8,280	108,333	1,716	949	304,482	110,050	21,413
11,153	3,444	1,435	57,028	1,335	—	135,448	32,108	19,302
—	—	3,484	55,556	516	—	108,613	16,022	25,459
16,667	5,556	2,630	55,556	1,154	—	242,447	78,386	15,534
37,057	271,671	279,089	2,517,833	167,492	67,690	,632	2,921,447	662,240
						11,545		

converted as 18 = 1l.

TABLE 20.—*Quarterly Statement, 30th June, 1872,*

Banks.	1	2	3	4	5	6	7
	Valuable Effects.			Claims.			
	Capital Deposited in Bonds.	Premises.	Furniture.	Interest-Bearing Bonds and Funds.	On Deposit Account Bearing Interest.		At Call, and Bills Payable at Sight or at Short Dates.
1. Skånes .....	£ 270,633	£ 3,127	£ 1,603	£ 106,923	—	£ —	£ 5,439
2. Wermlands .....	69,344	4,726	678	—	—	27,778	1,144
3. Kopparbergs .....	64,925	—	145	2,169	—	30,556	—
4. Östergötlands .....	45,453	—	—	38,350	—	25,000	—
5. Smålands .....	127,539	435	318	13,726	—	8,333	2,334
6. Örebro .....	85,716	—	268	5,988	—	38,889	168
7. Mälareprovinsernas .....	137,000	12,872	24	49,164	—	—	18,959
8. Göteborgs .....	113,306	3,303	379	10,285	—	—	—
9. Stockholms .....	41,564	5,556	662	535,370	—	—	—
10. Norrköpings .....	66,129	4,555	206	8,649	—	16,667	18,333
11. Wadstena .....	37,863	1,692	—	—	—	—	—
12. Hallands .....	37,778	—	182	5,000	—	—	163
13. Sundsvalls .....	47,771	—	319	20,583	—	—	6,835
14. Christianstads .....	83,098	—	1,018	115	—	—	5,681
15. Wenersborgs .....	62,639	—	445	—	—	—	420
16. Skaraborgs .....	41,667	950	338	—	—	—	—
17. Gefleborgs .....	62,519	1,916	257	4,842	—	92,056	1,361
18. Uplands .....	38,159	—	260	83,169	—	—	2,832
19. Westerbottens .....	57,427	177	188	—	—	29,167	—
20. Christinehamns ...	41,815	—	776	—	—	11,111	—
21. Borås .....	33,372	940	150	558	—	—	—
22. Södermanlands ....	38,785	2,750	278	15,557	—	6,667	3,902
23. Calmar .....	77,819	1,591	191	14,361	—	—	3,337
24. Gotlands .....	37,658	162	128	—	—	—	—
25. Bohus läns .....	41,448	—	72	—	—	—	—
26. Hernösands .....	41,667	—	142	10,317	—	11,111	11,609
Total .....	1,803,095	44,750	9,026	925,128	—	297,333	82,517

Note.—The riks dollar riksmynt

*of the Assets of the Swedish "Enskilda" Banks.*

8	9	10	11	12	13	14	15
Claims.							
Bought and Discounted Bills.		Outstanding on Cash Credits.		Outstanding Loans.			
Inland.	Foreign.	Number.	Amount.	Number.	Amount.	Number.	Amount.
£	£		£		£		£
679,334	74,791	1,199	194,108	601	91,106	29	3,934
94,621	—	340	39,912	92	35,458	3	394
71,825	—	201	50,228	61	4,054	—	—
40,337	—	672	48,400	58	8,442	1	25
98,340	7,644	1,734	116,609	197	27,042	10	522
48,357	—	343	56,074	50	25,289	—	—
141,736	—	1,232	125,420	229	51,128	36	22,744
148,780	33,396	541	89,447	179	48,996	6	4,944
151,570	52,611	403	148,228	71	42,414	56	63,432
77,625	13,265	452	64,321	72	35,147	2	106
26,856	—	586	35,824	36	7,417	—	—
8,805	—	377	33,903	14	1,633	—	—
169,126	9,607	176	64,067	20	2,608	—	—
174,304	8,929	579	70,633	118	14,407	5	267
47,161	—	372	36,440	128	10,891	—	—
48,967	—	542	50,022	109	20,791	2	69
54,635	—	178	45,789	20	10,378	1	28
53,390	511	491	44,674	145	17,713	7	452
80,636	—	171	20,383	193	20,276	19	2,706
39,562	—	234	31,396	31	6,872	1	33
26,773	1,503	265	30,167	36	5,153	—	—
13,239	—	440	32,434	150	18,328	5	122
46,881	13,509	537	54,914	232	19,310	2	722
32,092	—	132	19,883	56	8,965	—	—
37,959	—	97	7,244	1	111	—	—
46,784	—	152	58,495	11	2,817	—	—
2,459,693	215,765	12,446	1,569,015	2,910	536,743	185	100,502

is converted at 18 = 1*l.*

TABLE 20.—*Quarterly Statement, 30th June, 1872,*

Banks.	16	17	18	19	20	21	22
	Claims.						
	Outstanding Loans.				Balances of Running Accounts with other Banks.		
Against Security of Shares, Goods, &c.		Against Bonds with only Personal Security.		Against Security of Bondsmen.			
	Number.	Amount.	Number.	Amount.	Number.	Amount.	
1. Skånes .....	68	£ 61,229	68	£ 16,777	354	£ 16,037	£ 112,564
2. Wermlands .....	21	7,931	80	25,075	347	6,328	—
3. Kopparbergs .....	9	6,107	349	17,342	471	7,361	38,663
4. Östergötlands .....	2	89	356	21,867	121	4,216	—
5. Smålands .....	13	1,276	783	36,694	327	13,569	—
6. Örebro .....	25	24,928	304	62,018	7	3,767	97
7. Mälareprovinsernas	39	9,589	1,533	80,122	391	11,121	—
8. Göteborgs.....	47	40,194	709	79,947	377	20,918	49,619
9. Stockholms .....	118	87,066	52	36,267	155	5,556	—
10. Norrköpings.....	70	45,225	58	25,381	80	6,867	16,602
11. Wadstena.....	23	7,656	31	2,600	241	35,271	7,785
12. Hallands .....	3	169	1,119	39,075	—	—	28
13. Sundsvalls .....	5	1,783	203	7,758	19	1,487	4,160
14. Christianstads .....	18	2,578	568	21,816	412	10,902	48,657
15. Wenersborgs .....	1	2,778	1,544	46,783	1	2,222	7,676
16. Skaraborgs .....	14	14,202	580	32,566	104	4,603	—
17. Gefleborgs .....	20	13,531	9	4,811	56	3,031	27,745
18. Uplands .....	10	708	903	31,461	250	5,945	47,761
19. Westerbottens .....	—	—	465	9,445	464	6,652	—
20. Christinehamns ....	19	6,261	39	32,846	222	5,043	3,911
21. Borås.....	6	406	891	46,823	49	4,033	596
22. Södermanlands.....	14	3,783	303	20,828	73	3,172	—
23. Calmar .....	5	611	464	25,472	348	10,777	6,959
24. Gotlands .....	10	572	749	23,384	—	—	4,874
25. Bohus läns .....	—	—	7	13,889	—	—	—
26. Hernösands .....	2	528	45	4,455	31	3,019	1,278
Total.....	562	339,200	12,212	765,004	4,900	191,896	378,974

Note.—The riks dollar riksmynt

## of the Assets of the Swedish "Enskilda" Banks—Contd.

23	24	25	26	27	28	29	30	
Balances of Other Accounts.	Claims.			Balance of Cash.			Total.	
	Depending on		Total Claims.	Riksmynt in Silver or Riksbank Notes.		Notes of Other "Enskilda" Banks.		
	Lawsuits.	Bankruptcy.		In own Chest.	On Running Account with the Riksbank.			
£	£	£	£	£	£	£	£	
41,577	347	860	1,405,026	178,783	—	18,296	1,887,468	
3,087	86	—	241,813	45,397	—	4,978	366,936	
5,073	22	—	233,399	32,835	5,556	1,241	338,100	
2,048	—	—	188,775	48,949	5,556	1,728	290,460	
—	91	—	326,180	100,195	—	5,726	560,392	
2,146	—	1,550	269,272	78,107	5,556	2,057	440,976	
40,389	161	568	551,102	177,966	13,889	8,628	901,480	
5,717	—	86	532,330	71,655	5,556	24,136	750,664	
—	—	1	1,122,513	70,982	22,222	—	1,263,498	
2,156	—	72	330,416	78,074	—	1,170	480,550	
257	33	1,201	124,901	42,654	—	1,484	208,593	
—	69	194	89,039	19,980	—	1,329	148,308	
12,634	—	—	300,648	131,936	—	3,456	484,131	
3,440	361	27	362,115	22,058	8,333	4,512	481,135	
1,675	81	—	156,126	15,129	—	1,752	236,091	
4,095	101	139	175,555	68,858	—	1,001	288,368	
11,897	—	—	270,102	58,556	—	286	393,636	
5,578	106	391	294,691	27,450	32,224	4,357	397,141	
3,919	328	100	173,610	52,402	5,556	869	290,228	
3,746	17	112	140,410	21,313	—	553	204,868	
2,932	106	500	119,550	9,890	—	4,150	168,052	
2,436	—	—	120,468	17,822	—	3,463	183,567	
4,315	362	192	201,722	22,100	—	1,060	304,482	
1,102	97	—	90,970	3,101	3,333	96	135,448	
1,640	—	—	60,844	6,238	—	, 10	108,613	
1,299	—	—	151,711	41,592	5,556	1,779	242,447	
163,156	2,369	5,994	8,033,288	1,444,019	113,336	98,118	11,545,632	

is converted at 18 = 1*l.*

TABLE 21.—*Rates for Deposits and Advances by the*

Banks.	Rates for Deposits.				
	On Demand.	On Deposit with Notice of			
		One Month.	Two Months.	Three Months.	Four Months.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1. Skånes .....	2	2½	3	4	4½
2. Wermlands .....	„	3; fr. 1/5 2½	3½; fr. 1/5 3	4; fr. 1/5 3½	4
3. Kopparbergs .....	„	—	—	3	„
4. Östergötlands .....	„	3	3	4	„
5. Smålands .....	„	2½	„	3½	„
6. Örebro .....	2	2½	2½	3½	4
7. Mälareprovinsernas	„	3	3½; fr. 1/6 3	4; fr. 1/6 3½	4½; fr. 1/6 4
8. Göteborgs.....	3	3½	—	4	4½
9. Stockholms .....	2	3	3½	„	„
10. Norrköpings .....	„	„	„	„	„
11. Wadstena .....	2½	3	3	3½	4½
12. Hallands .....	2	2	„	„	4
13. Sundsvalls .....	3	3	3½	4	4½
14. Christianstads .....	2	2½	3	„	„
15. Wenersborgs .....	3	3½	—	„	„
16. Skaraborgs .....	2	—	3	3½	4
17. Gefleborgs .....	„	3	3½	4	till 15/6 4½
18. Uplands .....	„	—	3	3½	4
19. Westerbottens .....	„	3	—	4	4½
20. Christinehamn .....	3	3½	—	„	„
21. Borås.....	3	3½	3½	4	4½
22. Södermanlands ...	2	3	—	„	—
23. Calmar .....	„	2½	3	3½	4½
24. Gotlands .....	„	„	„	„	{ 4; 4½ (for 12 mon.)
25. Bohus läns .....	2 á 3	3½	4	4½	—
26. Hernösands .....	2	2½	3 { 3½ á 4; fr. 7/6 3½	4 á 4½; fr. 7/6 4	

Swedish "Enskilda" Banks, Second Quarter of the Year 1872.

## Rates for Loans.

With Mortgage of Real Estate.	With Other Deposits or Security.	For Advances.		Discount on Bills.	
		Interest.	Commission.	Short.	Long.
Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
5 á 5½	5 á 5½	5	½ á ¾	4½	5
5 „ 5½	5, 5½, á 6	5½	¾ „ 1	„	„
5	5	5 á 5½	½ „ 1	5	„
5 á 5½	5 á 5½	5½	1	4½	„
5 „ 5½	5 „ 5½	5 á 5½	„	4½ á 5	5 á 5½
5½ á 6	4½, 5, 5½, á 6	5½	1	4½ á 5½	5 á 6
5	5	5 á 6	½ á 1	4½	5
4½ á 5½	4½, 5, á 5½	5 „ 5½	1	4 á 4½	4½ á 5
5 „ 5½	5½ á 6	5	„	4	5
5 „ 5½	5 „ 5½	5½	„	4½	„
5½	5½	5½	1	5½	5½
6	6	6	„	5	6
„	„	5 á 5½	„	5 á 5½	5 á 5½
5½	5½	5	½ á 1	4½ „ 5	5 „ 5½
5½ á 6	5½ á 6	„	1	4½	5
5½	5½	5½	1 á 1½	5	5
5 á 5½	5 á 5½	5	½ á 1	„	5½
5	5	„	1	4½ á 5	5
5½ á 6	5½ á 6	5½	1 á 1½	5, 5½, á 6	5, 5½, á 6
5 „ 6	5 „ 6	„	1	4½	5 á 5½
5½	5½	5	1	4½	5
5	5	5½	„	„	„
5 á 5½	5 á 5½	5	„	„	„
} 4½ á 5	4½ á 5	6	„	„	„
	4½, 5, 5½, á 6	5½	1	5, 5½, á 6	6 á 7
} 4½, 5, á 5½	4½, 5, á 5½	5, 5½, á 6	1 { 4½ á 5; fr. 15/5	5 á 5½; fr. 15/5	5 á 5½
			5		5½

These three tables are the quarterly statement of the "Enskilda" banks at the 30th June, 1872. I have translated them, and reduced the amounts to English currency for the convenience of my readers. The form of balance sheet is extremely minute, and goes into particulars which would be vainly sought in the balance sheet of any English, or even of any Scotch banking company.

On the side of assets, Table 20, the first item shown in col. 1 is the amount of those bonds and mortgages in which the portion of capital which serves as the basis of the note circulation is invested. The amount held in interest-bearing obligations is stated in col. 4. The advances, in the careful making of which the real difficulty of banking lies, have to be specified under the following heads :

Cols. 8 and 9. Bought or discounted bills (whether inland or foreign).

,, 10 „ 11. The number and the amount of advances on cash credit.

,, 12 „ 13. The number and the amount of advances against security of mortgage of real estate.

,, 14 „ 15. The number and the amount of advances on interest-bearing bonds.

,, 16 „ 17. The number and the amount of advances against shares, goods, &c.

,, 18 „ 19. The number and the amount of advances against deposit of bonds with personal security only.

,, 20 „ 21. The number and the amount of advances against security of bondsmen.

,, 24 „ 25. The amounts depending on law-suits and on bankruptcy.

The total sum of the advances made by all the "Enskilda" banks collectively, amounts only to about three times their own capitals and reserve funds put together, a state of matters which must conduce greatly to their solidity. These loans must have been of great service in promoting the prosperity of the country. The columns giving the number of advances made, show that the amounts are individually small; this probably indicates that banking facilities have been given throughout the country, in its remotest provinces, as well as in the capital. The care with which these advances have been made is shown by the columns which state the amount of advances in jeopardy. These are only about 8,000*l.* for the whole of the "Enskilda" banks. On the side of liabilities, Table 19, col. 1 gives the proportion to the bank's own notes issued, of the State's bank notes and coin held by each bank, and shows how carefully the convertibility of the notes issued is provided for. The cash held in reserve is more than half the amount of notes in circulation. The basis of the note circulation is

shown by col. 1 of Table 20, which states the amount of capital deposited in bonds; cols. 27 and 28 of the same table, containing the sums held by each bank in silver or in notes of the Riksbank, and on running account with the Riksbank; and by col. 15 of Table 19, in which is given the "amount of cash credits granted," against which also, under the regulations stated in sec. 26 of the Swedish Banking Law, notes may be issued. The amount contained in col. 15, cannot be ascertained from the published accounts, but only from an investigation of the securities themselves. It is the statement as made by the Government Comptroller, and accepted by the banks. The highest limit of the note circulation allowed will be found in col. 16 of Table 19. No banks have taken advantage of the power reserved to them of raising capital by issuing shares with limited liability. The provisions giving this power will be found in secs. 3, 4, 25 of the Swedish Act of Legislature, which are well contrived for the purpose. These stipulations were made in case some monied men in Stockholm should be desirous of placing their capital in a remote "Enskilda" bank without incurring the risk of unlimited liability for the whole concern. But to the present time, the confidence enjoyed by the "Enskilda" banks' management has really been, and is, so unlimited, that no "Enskilda" bank has needed to take partners "en commandite." There are at present 26 "Enskilda" banks carrying on business; not one of these has less than 100 partners. Two "Enskilda" banks have amalgamated with other banks in the same localities without any inconvenience to the public. Altogether there are 118 "Enskilda" banks and branches carrying on business in the country; that is to say, about one banking office to every 35,000 inhabitants. The population which ninety places possessed in 1870, is given in the "Swedish Statistical Abstract" published in 1872. Their size was as follows:—

TABLE 22.—*Population of Towns in Sweden in 1870.*

14 places with less than .....	1,000 inhabitants.
28 places between.....	1,000 and 2,000 "
10      "	2,000    "", 3,000 "
9      "	3,000    "", 4,000 "
3      "	4,000    "", 5,000 "
7      "	5,000    "", 6,000 "
4      "	6,000    "", 7,000 "
4      "	7,000    "", 8,000 "
2      "	8,000    "", 10,000 "
2      "	10,000    "", 11,000 "
1 place between .....	11,000    "", 12,000 "
1      "	14,000    "", 15,000 "
1      "	15,000    "", 20,000 "
1      "	20,000    "", 25,000 "
1      "	25,000    "", 30,000 "
1      "	50,000    "", 60,000 "
1 place (Stockholm) with	136,016 "
90 places.	

This statement, coupled with the fact that of the 4,168,525 inhabitants of Sweden in 1870, 3,628,876 were enumerated as living in the country districts, and only 539,649 in the towns, the size of which is described above, gives an idea of the nature of the field for business in which the “Enskilda” banks carry on their operations, and enables us better to appreciate the success which they have attained. As far as legislative enactments, and methods of keeping accounts go, Sweden is better provided for than any country in Europe. The concurrence of the Commissioner appointed by the Governor of the Province in the examination of the bonds and mortgages in which that part of the capitals of banks is invested, against which the note circulation is issued; his concurrence also in the drawing up of the quarterly balance sheets, and the power reserved to him of examining the accounts and transactions of the bank, at any time whatever, are in themselves great securities against the statements being falsified. There is a further power reserved to the Minister of Finance to cause an investigation to be made at any time he thinks fit, and to ask for explanations. The “Government audit” so often desired is thus attained without difficulty; but while everything connected with these banks is thus laid open to inquiry, no one is allowed to make known the private transactions of the customers. Absolute immunity from risk of loss is not to be reached by any system however perfect. Real security in banking is the result of careful and prudent management, and of that only. But the checks which well-arranged legislation requires, and which the compulsory adoption of a complete system of accounts imposes on the rash or the fraudulent, are often of great benefit in reminding the careless or the unfaithful administrator of the risks which he incurs when he departs from the correct method of carrying on business. The Swedish banking law is extremely well arranged, and gives every protection which legislation can supply in these matters. The influence which the authority of Government can have over the conduct of business is, when exercised in this manner, very considerable, and it is most desirable that it should be so directed as to foster and maintain foresight and prudence in banking. I add in Table 23 the balance sheet of the Riksbank of Sweden on the 29th June, 1872. This will show how large a proportion of the precious metals is held against the notes in circulation, and on what a solid basis that circulation rests.

TABLE 23.—*Balance Sheet of the Riksbank of Sweden, 29th June, 1872.*

[000's omitted, thus £1,042, = £1,042,000.]

<i>Assets.</i>	£
1. Gold and silver .....	1,042,
2. Other values, on the basis of which notes may be issued .....	549,
3. Copper money .....	7,
4. Bought or remitted bills .....	266,
5. Interest-bearing obligations and funds .....	560,
6. Debt with the public mortgage bank, against mort- } gage of real estate (landed property) .....	281,
7. Loan, against pledge of bank's old obligations .....	}
8. " real security in the city .....	26,
9. Loans or cash credits .....	1,783,
10. Unpaid interest, arrears of money, city loan fund debt .....	132,
11. Discounted bills.....	325,
12. Loan, against pledge of obligations .....	567,
13. " goods .....	86,
14. On granted cash credits, taking the sum total .....	303,
15. Loan, partly renewable security credit .....	373,
16. Reserves belonging to discounts and loans.....	339,
	6,639,
<i>Liabilities.</i>	£
1. Notes in circulation .....	1,812,
2. Bank post bills do. .....	222,
3. Due on interest-bearing obligations, remains of debt, } and city loan .....	18,
4. Due on deposits, not bearing interest .....	528,
5. Bonds and stock .....	418,
6. Capital .....	1,389,
7. Reserve .....	260,
8. Different small accounts .....	7,
9. Outstanding on deposits against interest .....	118,
10. On running accounts, capital and interest.....	211,
11. Branches of the State's bank for discounts and loans ....	1,656,
	6,639,

*Note.*—The riksdoller riksmynt is converted at 18 = 1*l.*

The following statement is interesting as showing the progress of the Swedish “Enskilda” banks from the years 1865 to 1871. Their present position is in detail on Tables 19 and 20.

TABLE 24.

[000's omitted, thus £3,920, = £3,920,000.]

	1865.	1866.	1867.	1868.	1869.	1870.	1871.
<i>Assets—</i>	£	£	£	£	£	£	£
Total .....	3,920,	3,980,	4,960,	4,880,	6,730,	7,310,	8,800,
Of which were discounted bills .....	1,090,	1,070,	1,370,	1,350,	1,950,	2,390,	3,110,
On cash credits .....	958,	1,120,	1,150,	1,210,	1,460,	1,490,	1,620,
Loans against security ....	1,380,	1,210,	1,590,	1,510,	2,220,	2,240,	2,330,
Cash in hand .....	770,	800,	900,	910,	940,	1,320,	1,550,
<i>Liabilities—</i>							
Notes in circulation .....	1,860,	1,750,	1,910,	1,700,	1,940,	2,230,	2,680,
Total of other liabilities	4,110,	4,380,	5,380,	6,000,	7,100,	7,800,	9,000,
Of which were deposit accounts .....	1,140,	1,340,	1,630,	1,870,	2,480,	2,890,	3,770,
Current accounts .....	406,	421,	541,	544,	940,	1,240,	1,390,
Capital.....	2,040,	2,250,	2,440,	2,370,	2,760,	2,780,	2,830,
Proportion of riksmynt held to notes in circulation .....	0·36	0·44	0·45	0·51	0·44	0·46	0·47

*Note.—The riksdoller riksmynt is converted at 18 = 1l.*

The great support which the commerce and industry of Sweden have derived from the "Enskilda" banking system established in that country, is evident at a glance from this statement.

*Banking Law of Sweden.*

(Translated from the Swedish.)

1864. COLLECTION OF SWEDISH STATUTES. No. 31.

*His Royal Majesty's Gracious Proclamation respecting Private Banks with right to issue their own Bank Notes. Given at the Royal Palace of Stockholm, the 20th of May, 1864.*

WE, Charles, by the Grace of God King of Sweden, Norway, the Goths and Vandals, give notice, that whereas the States of the Kingdom in their address of the 26th November, 1863, presented to us the project of a law concerning private banks with

the right to issue their own bank notes, upon which the highest courts of law gave their opinion, but we found ourselves hindered from accepting in an unaltered form that same project, which likewise comprised matters having the nature of civil law; we have taken into gracious consideration those parts of the said project which do not belong to civil law, and have thought proper, rescinding the Royal Proclamation of the 14th January, 1824, respecting the establishment of private banks and discount offices, the Royal Proclamation of the 9th January, 1846, respecting private banks which issue their own bank notes, and the Royal Proclamation of the 10th of November, 1855, concerning certain alterations in and additions to the aforesaid proclamation of the year 1846, being mainly in accord with the project of the States of the Kingdom, to enact and direct for the information of those private banks of issue, which may hereafter establish or obtain the desired charter, as follows:—

#### § 1.

Private persons desirous of entering into partnership for the object of carrying on banking business by means of an elected board of directors, with the right of issuing their own bank notes, shall make application to us for our gracious permission thereto, and at the same time hand in the rules and regulations adopted by the Company. If they are found to be in accordance with this law and the common law and statutes in general, and we find the establishment of the bank to be beneficial to the country, a charter will be given to carry on banking business during a period of at most ten years, reckoning from the opening of the bank.

If the Banking Company wishes to have the charter extended, it shall make application in the manner just stated, eighteen months before the current charter runs out.

#### § 2.

The partners in such Banking Company shall be Swedish subjects to the number of at least thirty, and they are responsible, one for all and all for one, for the fulfilment of all the engagements of the banking company. They are called partners with joint responsibility.

#### § 3.

It is open to the partners with joint responsibility, for the purpose of increasing the capital of the bank, to unite with themselves shareholders whose responsibility for the engagements of the Company is limited to the full amount of their shares. They are called shareholders with limited liability, and such may not be received into the Company for more than at most the half of the amount which the partners with joint responsibility put into the capital.

#### § 4.

The owners of shares with limited liability may not be allowed the right of taking part in any other resolution at the Company's meetings than the election of auditors, to which office, however, they may be elected.

#### § 5.

Par. 1. A partner with unlimited liability, his heirs or sharers in his estate, shall not be entitled during the term of the charter to retire from the Company, or transfer any of his shares to another person, unless the Company consent thereto. A request on that account shall be made in writing to the directors, and taken into

consideration at the ordinary meeting of the Company, to be held in the business year next ensuing.

Par. 2. Owners of shares with limited liability may transfer their shares to another person, after notice has been given to the directors of the Company, due regard being had in other respects to the rules laid down by the Company for such purpose.

### § 6.

When a partner with unlimited liability retires from the Company, or a fresh partner of the same character joins it, notice thereof shall, after each ordinary meeting of the Company, be given on the part of the directors to the local court of justice, so that an entry may be made in its register, and also advertised in the public newspapers.

### § 7.

Par 1. A list of the whole, partners with joint responsibility as well as shareholders with limited liability, shall be kept at the bank, which list, moreover, shall contain a statement of the number of shares which each one holds.

Par. 2. In this list all duly made alterations in the right of ownership of the shares shall be immediately notified.

Par. 3. It is free to every one who so wishes, at such times as the bank is kept open for the public, to take note of this list, also upon payment of a fee, to obtain, for the sake of correctness, a certified extract therefrom by the proper official.

### § 8.

The rules of the Company shall contain resolutions concerning the following principal subjects :—

- a.* The amount of the capital ;
- b.* How far shareholders with limited liability may be admitted, and on what conditions, especially as to the share of the profits which shall come to them ;
- c.* The grounds for exercising the right of voting at the Company's meetings ;
- d.* The number of directors on a board, which at the head office must at least be five ;
- e.* The number of auditors and the time of the audits, which shall be performed annually ;
- f.* The branches of the business of the bank ; it being expressly enacted that neither its own share certificates nor those of other private banks may be accepted as security for advances ;
- g.* The manner of effecting alterations in the Company's rules ;
- h.* The time of the ordinary meetings of the Company, which shall be held at least once a year, and the conditions for calling together extraordinary meetings of the Company ;
- i.* The formation of a reserve fund, and the share of the annual profits, which shall be transferred thereto ; and
- k.* The terms upon which, taking into consideration what is hereinafter prescribed in § 13, the registered bonds and interest-bearing obligations shall be valued, which may be accepted as deposit for issued bank notes.

### § 9.

The capital of the Banking Company contributed by the partners with joint responsibility may not be under one million riksdollars riksmynt [55,555*l.* 11*s.* 1*d.*].

## § 10.

Par. 1. This capital shall be fully paid up in the coin of the realm within one year, reckoning from the date of the bank being opened to the public, and the proportion thereof fixed hereinafter in § 13 converted into bonds and deposited in a public place of safety, in accordance with what this law and the Company's rules in other respects may more especially determine.

If the capital has not been contributed in the said manner within the period now fixed, the charter shall be forfeited.

Par 2. If shareholders with limited liability have been admitted into the Company, the amount by which the original capital is thus increased shall likewise be contributed within a year, reckoning from the date when the subscription opened on that account was closed.

## § 11.

The capital shall be divided into equal shares. The share certificate shall always be made out in favour of a person mentioned by name, and may not be issued before the capital in full has been contributed as enacted on that account in § 10.

## § 12.

The capital contributed may not be decreased by division, so long as the business of the bank continues, nor at its termination in a wider proportion than that the remainder fully corresponds with the amount of the Company's circulating and current liabilities of all kinds.

## § 13.

Par. 1. The directors shall, in accordance with particular rules made by the Company, convert at least 60, and at most 75, per cent. of the capital into public bonds of such a nature as is hereinafter stated.

Par. 2. These bonds shall consist, at least in one-third part of readily saleable obligations, bearing interest, and for the remainder thereof, of bonds registered upon landed property in the country, within the half of the assessment value last determined, or in real property in a town, within the half, either of the value of the insurance against fire, or of the assessment value last determined; the buildings in towns, however, in order to allow of the registration thereon being accepted as this security, must always be insured against fire in some fire insurance office in the country provided with rules and regulations duly granted.

## § 14.

Par. 1. The capital of the bank deposited in bonds shall be examined by delegates of the Company together with the Governor of the province, or whoever he may appoint in his place to be present at the examination, and approved, when the bonds are found to be of the nature mentioned in the foregoing section, and in other respects may be considered to contain full security.

Par. 2. The exchange of securities belonging to the capital deposited in bonds is dealt with in the very same way as at the first examination.

## § 15.

The capital of the bank deposited in bonds shall be placed in security at the office of the Exchequer or some public place of safety in a box or chest furnished with two locks, to which the directors and a public officer chosen by the appointed Commissioner shall have each his key.

## § 16.

Par. 1. The partners with joint responsibility in the Banking Company shall elect from among themselves a board of directors, who shall have the right, in accordance with the instructions which are issued by the Company, and under such control by public authority as in that law is enacted, to manage the bank, and in every business lawfully to speak and answer for the Company.

Par. 2. Every partner who is chosen to be a member of a board of directors shall deposit in the keeping of the bank, at least one share certificate, which shall not be delivered up from the bank so long as he remains a member of the board of directors.

## § 17.

Par. 1. A member of the board of directors may be removed from his office by a resolution duly passed at a meeting of the Company.

Par. 2. If a director retires he still remains responsible for the transactions in which he has taken part, until an ordinary meeting of the Company, after an audit has taken place in the usual way, has assented to his release.

## § 18.

The names of the directors of a board and of those persons who are entitled to sign the Company's bank notes and other liabilities, shall after every ordinary meeting of the Company, also when any change in these respects has otherwise taken place, be notified to the appointed Commissioner, and be inserted in the public journals.

## § 19.

It is incumbent upon the directors :—

To keep the accounts and transactions of the bank, at any time whatever, accessible to the Commissioner or his deputy, as well as for the special examination which we may think proper to order ;

To draw up immediately after the close of each quarter, in the presence of the Commissioner or his deputy, and thereupon without delay to send to the Minister of Finance, likewise to publish in the newspapers, a summary showing the state of the bank ; this summary shall likewise contain a statement of the interest on loans and the discount which were current in the bank during the period comprised in the summary ;\*

To advertise immediately in the public journals, so soon as an alteration in the interest on loans or the discount has been resolved upon ;

To send into our finance department after an audit has been performed, a report of the audit, likewise to have the same inserted in the public journals ; and

To make themselves accurately acquainted with what this law enacts and the Company's rules, fixed by us, prescribe.

Should any deviation take place, and the circumstance, when observed, not be rectified within a month, it will rest with us in a grave or important case to declare the Company to have forfeited the right to carry on banking business.

## § 20.

The relations of private persons to the bank may not be divulged to the public.

\* The quarterly statement of the Swedish banks given in Tables 19, 20, and 21, is in accordance with this section of the statute.

## § 21.

The head office of the bank may only be opened in a town.

## § 22.

It shall be notified by advertisement in the public journals when a bank starts its business, and information of the date when that takes place shall be sent to our finance department.

## § 23.

Before a bank commences business, it shall be proved before the Commissioner :—

*a.* That the charter granted by us in favour of the Company, as well as the rules of the Company, have been produced, in the original, before the court of justice in the town where the Company's head office is situated, and verbally entered in its register, and that the court has, at the Company's expense, had an advertisement inserted in the public journals of the Company having been formed.

*b.* That a list of the partners who, in accordance with this law are jointly responsible for the Company's engagements, has not only been delivered to the same court, and entered into its register, but also advertised in the public journals.

*c.* That at least 10 per cent. of the capital has been paid into the bank on its shares, also that the papers which the Company has approved on examination have been delivered up to the bank in security thereof, and that the remainder of the capital will, according to § 10, be paid to the bank within a year.

## § 24.

Before a bank commences to issue its own bank notes it shall furthermore be proved before the Commissioner :—

*a.* That the deposit of the bank, in value corresponding to at least 25 per cent. of the capital, has been deposited in the way prescribed at a public place of safety.

*b.* That proofs of the bank notes have been delivered to our finance department.

*c.* That the names of the persons who shall sign the bank notes have been inserted in the public newspapers.

## § 25.

Should shareholders with limited liability be taken into the Company, after the Banking Company has fulfilled what has been said respecting the right to issue its own bank notes, the Company, which wishes to base its issue of notes upon the increase thus obtained, shall be bound, before it can be considered entitled thereto, specially to prove before the Commissioner that the deposit, corresponding to at least 60 and at the highest 75 per cent. of the increase, has been further deposited in the prescribed manner at a public place of safety.

## § 26.

The Banking Company, which is entitled to issue its own bank notes, may not deliver or in general business keep at one time in circulation a higher amount than when summed up in value corresponds to :—

*a.* The bonds deposited at a public place of safety, according to the accounts of the bank.

*b.* The cash in hand of the bank consisting of the coin of the realm and notes of the Bank of the Kingdom.

c. Gold and silver, according to the rules of valuation which is now or may hereafter be prescribed for the Bank of the Kingdom.

d. Balances of account with the Bank of the Kingdom.

e. The securities held by the bank for cash credits granted, and which are in their nature to be compared with the deposit of the bank, in the proportion that credits are solicited; still, never to a larger amount than corresponds to 50 per cent. of the entire capital of the bank.

### § 27.

Par. 1. The bank notes shall be issued by the Banking Company in favour of the holder, to be cashed on demand without interest, and signed by at least two members of the board of directors and an officer of the bank who may be appointed thereto by the directors.

Bank notes may only run for 5, 10, 50, 100, and 500 riksdollars riksmynt.

[5s. 6d., 11s. 1d., 2l. 15s. 6d., 5l. 11s. 2d., 27l. 15s. 6d.]

Par. 2. They shall in size and form be so manufactured that the paper for those of 5 and 10 riksdollars shall be 4½ inches in length and 2½ inches in breadth, for those of 50 and 100 riksdollars 5 inches in length and 4½ inches in breadth, and for those of 500 riksdollars 7½ inches in length and 4½ inches in breadth, in every way according to the Royal decree for Weights and Measures of the 31st January, 1855.

Par. 3. The bank notes may be manufactured of paper without colour, still not like the notes of the Bank of the States of the Kingdom. As to the printing or engraving, that may rest with the Company to determine; yet the value of the bank note must always be clearly expressed.

### § 28.

The bank note shall, when it is presented at the Company's head office to be changed, be paid with coin of the realm or notes of the Bank of the Kingdom. If payment is refused, the holder of the bank note shall be entitled, together with the principal sum, to obtain interest at the rate of 6 per cent. per annum from the date of payment having been refused until payment can be obtained.

### § 29.

Should the Banking Company fail in its duty to pay on demand the bank notes which it has issued, the holder, after a protest has been effected by a notary public, for which the cost shall be borne by the Company, shall be entitled to make a report on the circumstances to the Commissioner, who, if it cannot be immediately proved that the hindrance originated in an accident, shall without delay make a report to us stating the circumstances, and in the meantime suspend the business of the bank. It will rest with us to decide how far the charter of the bank shall in such case become forfeited.

### § 30.

The Banking Company shall have the right, for the payment of its bank notes in circulation, to apply, if necessity so require it, after permission thereto has been obtained from the Commissioner, a greater or smaller part of the securities of the capital of the bank: in which case the Banking Company's right to issue notes shall be curtailed by the amount at which the securities sold were valued; but the Banking Company shall be obliged, as soon as it can possibly take place, to restore its securities to the proper amount.

## § 31.

Par. 1. An obligation bearing interest of a private bank, made out in favour of the holder, or to a certain person or order, may not run for a smaller amount than 500 riksdollars riksmynt. [27*l.* 15*s.* 6*d.*]

Par. 2. A deposit receipt with or without interest shall be made out in favour of a certain person, and contain therein that a transfer thereof must be notified at the bank for the security of the new owner thereof.

## § 32.

Par. 1. The Banking Company shall be entitled to use printed or engraved forms, not only for bank notes, but also for bonds on account of loans, receipts, contracts, and quittances.

Par. 2. The receipts which are issued by a bank are only valid as quittances, but may not be transferred or delivered in business.

## § 33.

The Banking Company may not carry on business with anything else than gold and silver, home and foreign bills of exchange, and public stock bearing interest, nor become possessed of other real property than what is requisite for the bank premises; but it may not be hindered from purchasing mortgaged property which is sold by auction, whereby the rights and security of the bank may be concerned; still due regard thereto being had that such property shall be sold again as soon as it can take place without loss to the bank.

## § 34.

The Banking Company shall enjoy the same right to assistance in getting execution of a claim as is now or may be hereafter allowed to the Bank of the Kingdom; but legal proceedings on account of the claim shall be instituted within a month from the time of its having become due.

## § 35.

If the Banking Company, according to the duly audited balance of any business year, has made such losses that the reserve fund of the bank and 10 per cent. of the capital, which the partners with joint responsibility have contributed, have been lost, then the bank shall be placed under sequestration, and the Company be accordingly dissolved, so far as the Company does not, at a meeting of the Company called together for the purpose, declare itself willing, within three months, by means of the necessary additions to the shares, to restore the capital to its proper amount.

It is incumbent upon the Commissioner to watch carefully that such resolution of the meeting of the Company be carried out within the said time. If it be not so done, the Company shall be placed absolutely under sequestration and dissolved.

All persons who are concerned have to obey and be guided by this. For further certainty we have signed this with our own hand, and caused it to be confirmed with our Royal seal.

The Royal Palace of Stockholm, the 20th May, 1864.

CARL,

L. S.

J. A. GRIPENSTEDT.

## XVI.—*Statement of Banking in Denmark.*

From the 1st August, 1818 (the cession of Norway to Sweden took place in 1814), the National Bank of Copenhagen took the place of the Rigsbank (Bank of the Kingdom) in Denmark, accepting all its claims and debts, rights and privileges. The first duty of the bank was to endeavour to establish a sound currency and system of money for the kingdom, by maintaining the notes issued by the Rigsbank at their par value. To do this it was enjoined to collect and preserve a fund of silver in coins, bars, and banco money (equivalent to silver), sufficient to cash the bank notes whenever they were presented. The proportion of this basis has varied from about half the notes in circulation in 1859, to two-thirds in 1871. These have been the most usual proportions: In 1865, the year when the lowest amount was held, the amount was 1,096,000*l.* silver to 2,667,000*l.* paper; in 1866, 1,451,000*l.* silver to 2,933,000*l.* paper; in 1867, 1,428,000*l.* silver to 2,922,000*l.* paper. The ordinary duties of a bank were also to be performed, and the productive powers and commerce of the country facilitated by loans and discounts, also by opening accounts and receiving deposits. To enable the bank to give this assistance, it took over the property belonging to the Rigsbank, with also certain rights over the mortgages against which the Rigsbank had issued notes, until such time as those notes had been definitely redeemed. The bank is bound to hold silver for half of the existing paper money in circulation, of which silver at least half was to be the current silver coins of the country: the other half might consist of silver bars and Hamburg banco. The above-named proportion of silver to paper must be kept up. If a great demand for silver in one quarter of a year has prevented the bank, before the end of the quarter, from supplying the silver in proportion to paper, this proportion is to be unconditionally restored before the end of the next quarter. The bank petitioned in 1848 to be allowed to place sterling money to the realisation fund instead of banco, which was approved, subject to the following arrangements:—One quarter of the silver fund in the bank which was in banco may comprise bills in sterling money until further notice, the exchange of the same to be 13 marks 8 skilling, = 1*l.* The bank petitioned in 1854 for an increase from 2,222,000*l.* paper money to 2,660,000*l.*, which was granted, but the security held was to be increased by an equal amount, of which one-fourth was to be in silver money, one-half in silver bars, and one-fourth in bars or good banco or sterling bills. The bank petitioned in 1859 for increase of paper money above the 2,660,000*l.*, which was granted on the following conditions:—That the National Bank shall buy of any one who may wish to sell silver bars, of not less

proportion of pure metal to the alloy than, say,  $\frac{982}{1000}$ , for payment of  $18\frac{1}{2}$  rixdollars per mark fine of Cologne weight. At the bank meeting in 1853 the directors were authorised, until otherwise decided, to receive loans upon which 3 per cent. yearly interest is paid, with a mutual notice of three months. From 1st May, 1860, it was agreed with the Government to receive the State surplus of the treasury, and pay interest on it. Since 1858 the bank discounts daily. The following details enable us to appreciate the extent of assistance which the National Bank has been able to give to the commerce of the country, and the solid basis supplied to the paper circulation :—

TABLE 25.—*Position of National Bank in Copenhagen.\**

[000's omitted, thus £3,055, = £3,055,000.]

	1870.	1871.
	£	£
Notes issued .....	3,055,	3,610,
,, in hand.....	75,	173,
Silver held in bars and coin .....	1,567,	2,188,
Loans on real security .....	636,	626,
,, personal „ .....	1,229,	1,141,
Inland bills.....	781,	848,
Foreign „ .....	333,	478,
Mortgages and bonds held .....	752,	757,
Deposits and current accounts....	453,	587,
Reserve .....	127,	134,

\* From the "Statistical Abstract for Denmark," No. 4, 1872, p. 87. The rixdollar is converted as 9 = 1*l.*

Besides the National Bank of Copenhagen, there are several other banking institutions. The "Private Bank," an association which in England would be regarded as a joint stock bank, was established in 1857. The share capital is now 666,000*l.* The business of the bank was to comprise all ordinary bank transactions. The bank was to open debit and credit accounts for its customers, with the privilege to use the amount paid the same day as it was entered. The depositors may accept their bills payable at the bank, and the bank undertakes the cashing of their bills if desired. On payment of cash the bank issues cheques similar to the English bank post bills, but not at longer dates than seven days' sight or fourteen days' date. The bank receives sums of money on interest, and discounts bills payable in the town, but the discounting is made on the condition that at least one name is on the bill besides the issuer's. The bank buys and sells bills in other places in the country, as well as in foreign places. Precious metals in bars and in coins, also bank notes and paper money, are bought and sold by the bank. Government securities are not dealt with,

except on commission, and not even then except against cash payments, but this does not exclude the bank from placing a part of its capital in safe securities of the above-named kind. The bank negotiates loans on commission, and makes loans against security, which is given as a pledge, as—

- (a.) Precious metals, coined or in bars ;
- (b.) Government securities and stocks (but not the bank's own) also bonds issued by the municipality or other authorised corporations or societies, for which the price is officially quoted ;
- (c.) Solid mortgage bonds ;
- (d.) Goods ;

According to the following rules :—

- (a.) On precious metals is lent up to 90 per cent. of the value.
- (b.) On Government securities and stocks and other stocks of same class, 80 per cent. of the maximum of the quoted value. If the value of the securities should drop after the reception of the loan 5 per cent. or more, then the borrower shall, on request, within eight days, pay a deposit to raise the original security, and the bank shall deduct the amount from the loan. If the rectification is not effected within twenty-four hours, the bank has the right to realise the securities deposited. If the debt is not covered by the realisation, the borrower is bound to pay in cash the deficiency.
- (c.) On private mortgage bonds the loan must not exceed 80 per cent.
- (d.) The goods on which the bank lends money must not be such as can easily be damaged or undergo great fluctuations in price. They are to be valued as directed by the managers, and the loan must not exceed two-thirds of the estimated value. The goods which are pledged to the bank must be insured, and the policy kept in the bank. If the value of the goods drops after the loan is made to 10 per cent. or more, the bank has a right to demand of the borrower a further security, or a proportionate deduction from the loan, and if this is not immediately complied with, the goods are to be sold by public auction. Any decrease or damage does not concern the bank, and the borrower is bound in this case, as well as in all cases, to be liable to the bank for the loss.

On bills of lading for goods advances are not made. The bank receives all sorts of documents and valuables for safe keeping.

The “ Private Bank ” has done a considerable business.

TABLE 26.—*Position of the “Private Bank” in Copenhagen, 1871.*

[000's omitted, thus £522, = £522,000.]

	£
Inland bills held .....	522,
Foreign „ .....	291,
Loans on security .....	739,
Bonds .....	40,
Cash in hand .....	75,
Capital .....	666,
Reserve .....	110,
Deposits and current accounts .....	900,
Sundry creditors .....	124,

*Note.*—From the “Statistical Abstract for Denmark,” No. 4, 1872, p. 87.  
The rixsdollar is converted at 9 = 1*l.*

There is also a “Private Loan Bank” in Copenhagen, with a capital of 110,000*l.*, increased in 1873 to 220,000*l.*; and the Landmand’s Bank, established in 1872. It speaks well both for the banking institutions of Copenhagen and for the prudence with which the commercial undertakings of Denmark generally have been conducted, that the merchants of that country passed through the trial years of 1857 and 1866 comparatively unscathed.

I am indebted to the kind assistance of Mr. Edward Rawlings for the materials for this portion of my paper.

### XVII.—*Statement of Banking in Hamburg.*

The banking system existing at this time in Hamburg presents some interesting features. In this city, the most vigorous offshoot of the once powerful Hansa, the latest representative of the free commercial cities of mediæval Europe, there still remains a representative of those older banks, which were once of the highest importance in commercial affairs. Similar institutions greatly aided the prosperity of Venice, Genoa, Amsterdam, and Nuremberg. The Bank of Hamburg is now the last survivor of these banks, whose business lay in the assistance of commerce, not by loans, but by the local manufacture, so to speak, of an international coinage. In a city of the highest rank for commercial activity, but greatly circumscribed in territory, continually receiving payments for merchandise in the coin of other countries, a common standard of value was a matter of primary necessity.

The invention of bank money, that is, of a money of account which could be transferred at pleasure from one holder to another, enabled the trade of the place to be carried on without any of those hindrances to business which must have followed on the delay and expense attendant on the verification of various coins differing

from each other in weight, intrinsic value, standard of purity of metal, in every point, in fact, in which coins can differ from each other. By supplying a currency of universal acceptation, the Bank of Hamburg greatly contributed to the prosperity of that city. The bank carried on its business under the protection of the State, and was a place for deposit, or warehouse of the precious metals, principally uncoined silver. The "mark banco," or money of account, represented the  $59\frac{1}{3}$  part of a metrical pound of fine silver. Any quantity of fine silver was received by the bank, and credited to the sender at the rate of  $59\frac{1}{3}$  mark banco for one pound of fine silver, 1 p. mill ( $\frac{1}{8}$  per cent.) being charged to the person who sold the silver to the bank. Accounts could only be opened by a Hamburg citizen or corporation. In order to avoid any risk of loss, no silver was received below the fineness of  $\frac{982}{1000}$ , and every bar had to be assayed by a sworn assayer in the service of the bank. In this manner the payments to be made were merely transfers from one account to another by persons who kept an account at the bank. To transact their business they had either to appear personally or to be represented by an attorney, who brought the checks with a printed signature personally to the bank. Besides the business based on bar silver, the Hamburg Bank also advanced bank money against silver coins, and in a limited way in gold, under careful restriction and for a limited time only. These loans, however, could be renewed. The pledge itself could only be taken out by the person who took money for it, or by another one to whom it was formally transferred.

About twenty years ago it was found that the existing system wanted elasticity, as the bank gave no facilities whatever, neither for credits nor discounts. The currency, it will be observed, was a purely metallic one, the "mark banco" being merely the representative of an equal value of silver. But this arrangement, though perfect in itself, and presenting the safest form of currency, has not been able to save Hamburg from the troubles of a crisis. That of 1857 was even more intense in Hamburg than in London. We may hence observe how little influence the form of currency may have either in creating, or in allaying, a commercial crisis. In 1856 two private banks were founded, the Vereins Bank and the Nord Deutsche Bank. The first has shares partly paid up, and a capital paid up of 450,000*l.*, 150,000*l.* having been paid since December, 1871, the date of the balance sheet given below. The shares are at this time at a very considerable premium on the amount paid up. The shares in the second are fully paid up. The capital is 1,500,000*l.*, and the shares also stand at a considerable premium.

A third bank, the Commerz and Disconto Bank, with fully

paid-up shares and a capital of about 600,000*l.*, was established since the year 1869, and recently some other banks have commenced business. All these banks are founded under enactments which provide that the liability of the shareholders is limited to the nominal amount of their shares. According to the latest law, 40 per cent. of the shares must be paid up. With this the liability of the founders of such companies generally ceases. The audits of the accounts of these banks are entirely of a private nature, and are not verified by any public official. The banks have up to this time cleared with each other daily, settling the payments to be made to the other by transferring the balance to their account with the Hamburg Bank, in the same manner as our clearing bankers do by finally giving a cheque on the Bank of England. The Bank of Hamburg is required by law to publish a weekly statement of its accounts. The Vereins Bank and the Nord Deutsche Bank publish their accounts monthly, in accordance with their statutes.

I add the statements of the Bank of Hamburg, and the last yearly balance-sheets of the Vereins and Nord Deutsche banks. For these, and for much of the information contained in this statement, I am indebted to the civility of Mr. J. H. Gossler, of Hamburg.

TABLE 27.—*Position of Banks in Hamburg.*

[000's omitted, thus £2,265, = £2,265,000.]

	12th October, 1872.	18th December, 1872.
	£	£
Stock of silver in bars .....	2,265,	2,250,
Allowances against silver money .....	537,	521,
"        gold    ", .....	25,	30,
	2,827,	2,801,

*Balance Sheet of the "Vereins Bank" in Hamburg, for the Fifteenth Year of its Business, ending 31st December, 1871.*

ACTIVA (Assets).	£	PASSIVA (Liabilities).	£
" Portefeuille," Hamburg bills	827,	Share capital paid-up .....	300,
Foreign    ",	63,	Reserve .....	19,
Account with Bank of Hamburg	227,	Deposits.....	67,
Balance of cash .....	29,	Interest due on ditto .....	4,
Coupon account .....	1,	Acceptances .....	79,
Advances on securities.....	184,	Sundry creditors .....	996,
Bank premises, &c. ....	9,		— 1,075,
Sundry debtors, &c. ....	146,	Profit, &c. .....	45,
Shares in the Vereins Bank at } Kiel .....	15,		1,510
Furniture, &c. ....	9,		
	1,510,		

*Balance Sheet of the “Nord-Deutsche Bank” in Hamburg, for the Fifteenth Year of its Business, ending 31st December, 1871.*

[000's omitted.]

ACTIVA.	£	PASSIVA.	£
Account with Bank of Hamburg	336,	Share capital.....	1,500,
Cash .....	65,	Endorsement account .....	632,
Local bills .....	936,	Deposits.....	684,
Foreign „ .....	483,	Accounts with foreign corre- } spondents .....	93,
Public funds and shares .....	536,	Interests due.....	6,
Advances against security .....	600,	Brokerage account .....	2,
„ without „ .....	185,	Guarantee „ .....	45,
Premises, &c. .....	24,	Tantième .....	14,
	3,165,	Dividend account .....	189,
			3,165,

*Note.*—The mark banco is converted at 1*s.* 6*d.* in this table.

The statements of the Bank of Hamburg show how large a proportion of its holdings is of bar silver, and how small the quantity either of coined silver or of gold in its possession is. The balance sheets of the other banks show how large the proportion of reserve held, whether in cash or in account with the Bank of Hamburg, is to liabilities. The banking business of Hamburg is at this time in a state of transition. The German Parliament has decided that all Germany should possess a gold standard, and Hamburg will have to give up its old system of a bank currency based on uncoined silver. The change came into effect on the 15th February, 1873; after that date the monetary system of Hamburg will be rix money in marks, 150 of which will be equal to 100 marks banco. These new marks are to be represented by the German thalers of 3-marks rix money each, which it is intended to convert into gold marks coined in 10 and 20-mark pieces, 9*s.* 9*½d.* and 19*s.* 7*d.* I may mention here that these changes have come into effect within three days of the date of my reading this statement to the Society. The future banking arrangements of Hamburg may very probably take a different shape from those which I have described.

It is understood that the Bank of Hamburg will endeavour to continue its business under the new system, but in such altered circumstances it is difficult to imagine that it can find scope for a business such as it has hitherto carried on. The circulation being in future rix money, the well-known “mark banco” must disappear, with all its safety and convenience. It is to be hoped that the possessing the same currency with Germany may prove some compensation to the trade of Hamburg, and contribute to enlarged

mercantile transactions and continued prosperity. The value of the imports of Hamburg was for 1869 and 1870.

TABLE 28.—*Imports into Hamburg 1869 and 1870.*

	1869.	1870.*
	£	£
Total imports into Hamburg....	64,200,000	55,400,000
Of which was received—		
From Great Britain .... }	20,500,000	17,600,000

\* These particulars are taken from M. M. Block's "Annuaire de l'Economie Politique," 1872, p. 485.

1870 was the year of the French war, during a considerable part of which the River Elbe was blockaded. I understand that the subsequent year shows a great increase over 1869, but I have been unable to obtain exact information as to amounts.

The vast progress of the commerce of the city is shown by comparing these sums with the average of the total imports, which were

	£
For the Years 1861-70.....	56,600,000
And for                 '51-60.....	39,700,000

*Note.*—The thaler is converted at 3s.

### XVIII.—*Conclusion.*

I have thus completed my survey of the banking arrangements of three countries besides our own. They contrast well with each other as good examples of three different methods. In Denmark, where the occupation of the inhabitants is mainly agricultural, the banking system is perhaps less completely developed than in either Hamburg or Sweden. Hamburg presents an instance, now almost the last in Europe, of a State unimportant in apparent resources, without territory, without natural wealth, prospering as a great centre of the traffic of other nations. The old banking system was designed to facilitate the needs of an international commerce, such as the State carried on. This object was very thoroughly attained under the method of business pursued by the Bank of Hamburg. We now see a fresh system springing up designed to meet the new needs of the time. The vigour with which these new arrangements have been carried out, promises well for the future commercial activity of Hamburg. In Sweden, entirely different requirements exist; a country with a large extent of territory, with a sparse population, and a rigorous climate, needs to retain every particle of wealth it can either create or collect; we find there a banking

system admirably adapted to preserve and to promote the prosperity of the country. "Waste not, want not," might be the motto of this, as it should be of every banking system. Care and caution are impressed on every part of the Swedish method of business. There is none of the recklessness which too often marks lands of greater trade, and of greater resources. The minute care with which the banking balance sheets are drawn up; the publicity given to the proceedings; the thorough attention to detail, the resolution to endeavour to protect the public in those matters in which it is least able to protect itself; all show a prudence and a foresight worthy of the highest praise. The Swedish balance sheets may be thought to go very minutely into detail; but it must be remembered that attention to detail is the life of business. The Swedish banking law deserves careful attention, especially those portions of it which are designed to prevent speculation in bank shares; and those which provide security for the note circulation. The form of association, also, is remarkably good—it is admirably designed to promote careful management in carrying on the business; and combines the best points of joint stock association and private partnership. The statute is well considered and clearly arranged; the experience of other nations has been carefully interwoven into its provisions.

Of our own banking arrangements I need say but little, as they are so familiar to ourselves. I may fairly quote the old adage, "To speak of the bridge as it bears you," in this case. The banking system of the United Kingdom is, I believe, capable of considerable development, and capable also of some improvements which I trust it will shortly receive. It is one of which, as a whole, we may be justly proud. Beyond any question, the banking system, speaking generally, has greatly assisted the progress, husbanded the resources, and promoted the prosperity of the country. I have spoken of the banking system of the United Kingdom as a whole, but it is not a little remarkable that in the three different divisions of our own country, we find methods of conducting the business differing from each other quite as much as those of the three nations which I have selected for the purpose of comparison with ourselves. The largest aggregate of deposits beyond any doubt is in England, but among the three portions of the United Kingdom, it is of Scotland alone that I can exhibit anything like a complete banking balance sheet. It is Scotland that has, relatively to its population, the greatest number of banking offices, and the greatest amount of deposits. It is Scotland that gives the greatest publicity to details. It is, hence, clear that publicity is a help and not a hindrance to banking business.

It is much to be regretted that Sir Robert Peel did not in 1844 prescribe a uniform plan of balance sheet for the joint stock banks of the United Kingdom, and require a uniform publication of accounts.

Sir Robert Peel's reason was that no form could be devised which the fraudulent might not evade. This is true; still, a carefully considered and well-designed form cannot but be of service, and, when universally adopted, would show what banks were, or were not, attending to the leading principles on which a banking business should be conducted. Recent legislation has in some degree repaired the omissions of 1844, as far as the limited liability banks are concerned, but still, as I have previously mentioned, a great diversity of practice prevails.

I have spoken elsewhere of the Act of 1844, of what it has done, and of what it has not done so completely. It has very distinctly improved the basis of the Bank of England note circulation, but it has not had as great an influence on the banking reserve. The effect which the bank note circulation of the country, speaking generally, has upon the money market, is obviously traceable to its influence on the banking reserve. Thus, what is now by far the least important part of the circulating medium, for, as I have shown, the note circulation is far smaller in amount than the gold circulation, and infinitely smaller than the circulation of money in cheques, becomes at times the most important part in its influence. Under these circumstances, considering how greatly deposit banking has extended, and is likely to extend in the United Kingdom, and how much London has become the banking centre of Europe, it seems scarcely desirable to concentrate, more than is done at present, the increasing and varied demands which may arise from these causes on one single banking reserve. The existing country note circulation might be, without difficulty, arranged in such a manner as to provide for the internal wants of the country. I have always regretted that in 1844 Sir Robert Peel did not employ the country note circulation, as he might have done, as a link to unite the country banks together. Had Sir Robert Peel, instead of aiming, as he did throughout, to extinguish the country note circulation, endeavoured to strengthen it; had he facilitated, instead of hindering, the transfer of the right of issue from one country bank to another; had he given greater freedom to the form of association, we should, I believe, before this time have seen a small but sufficient number of powerful banking institutions arise, formed in the best manner that such institutions can be formed, by the union of existing but separated banks into one well compacted body. Union is strength. From the union of existing materials, I believe that a banking system might be formed, with which for solidity and good management no other association could compare.

The solidity and good management of the banking institutions of the country must always be matters of great moment to all classes and ranks in the community. In describing what exists, I have

throughout confined my observations to the practical side of the question. Throughout I have sought to avoid expressing any mere opinions unsupported by facts, and I have made as complete an analysis of facts as is possible. I have endeavoured to draw up a chart of the circulating medium—a map, if I may employ the expression, of those seas over which our commerce is carried, pointing out the position of the currents as well as of the shoals, which our progress may encounter in its course. I have also given an outline of some of the re-arrangements which that progress may require. It is probable that, should the extension of our trade continue, the course of our banking will experience a similar change, and require to be moulded according to the altered wants of the time. The need of strengthening the banking reserves of the country is obvious. It would also be very desirable that some central association should be formed by which the requirements of the business should be considered, and their regulation arranged; by which also the advantages to be derived from the extension of business, as in the Scotch system, over a considerable area of the country, including districts differing in their character and requirements, might be attained. These changes, though they may be necessary, will need great caution in their introduction. What is settled by custom must always be handled with the utmost care. Still, wherever progress exists, some readjustment, some alteration will be continually needed. In these matters, “Time is the greatest “innovator; and if time in its course alters things to the worse, “and wisdom and counsel shall not alter them to the better, what “shall be the end?” These are the words of one of the earliest, perhaps the ablest, of our English men of science, a man also of much practical experience in all the business of his time. Remembering his sound advice, I trust we may bring the discussions on this important subject, on the due understanding of which the welfare of the country so largely depends, to a prosperous and successful issue.

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## MISCELLANEA.

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*I.—Discussion on Mr. Palgrave's Paper.*

MR. NEWMARCH said it was quite true that more than twenty years ago he inflicted upon the Society a paper on banking, almost as long as Mr. Palgrave's, and he was glad to find that the facts he had collected had proved of use in later years. He congratulated Mr. Palgrave on the luminous and concise way in which he had brought before the Society the material points in his paper, and was glad to find that a new labourer had entered upon the field of investigation, which he (Mr. Newmarch) had begun many years ago. He had on several occasions attempted to take up the thread of his inquiry, and he had collected sufficient materials for continuing his analysis between 1851 and the present time, but he had not had time to carry out his project. The subject was one which might be advantageously treated by several minds. He was happy to find that Mr. Palgrave's researches had in the main confirmed the results arrived at twenty-three years ago. Without going into details, he accepted in the main the two chief conclusions which Mr. Palgrave had placed before them as regards bill circulation. There was no doubt that since 1851, or 1861, or even a later date, there had been an amazing expansion in the bill circulation of the country, including the foreign bill circulation. The foreign element was more than double the amount at which it stood twenty-two years ago. It was an element that would continue to increase, and it was attended with consequences which they were only just beginning to understand. In one sense, as Mr. Palgrave suggested, it gave foreign countries a largely increased power over the London market, *i.e.*, over the reserve in the Bank of England, and it was one of those things that would necessarily lead to a radical revision of the legislation adopted in 1844-45. So far from its being a disadvantage to the country that it should become the focus and centre of great international financial operations, it was a positive advantage that we should avail ourselves of our insular position, the security of our laws, the immaculate character of our justice, and the extent of our freedom, in order to render London and England more and more the focus of the trade of the world. It had become so to a greater extent than any other place, and it would be wise to adopt our internal banking economy to the altered state of things, and to recognise the fact once for all that the reserve of the Bank of England was no longer a reserve held merely against domestic and internal wants, but a reserve for international purposes of the largest character, a lesson which for years past he had never ceased to inculcate. As regards the component parts of mere bank note circulation, that (as Mr. Palgrave admitted) was a smaller affair, and ought to become so. Thirty years ago all the great men of the day (excepting their own revered member Thomas Tooke, whose mind was too philosophical to be carried away by mere traditions) could not divest

themselves of the lessons which were supposed to have been read by the consequences of the great war when the country was drained of its capital almost to the last shilling. For money to be then left at a bank at interest was a circumstance of the greatest rarity. The banking resources consisted mainly of bank notes, and the question related entirely to the amount of such notes. The great crisis of 1826, which swept away nearly a hundred country banks, arose from an abuse of the internal circulation, and it was no wonder that it left behind it strong impressions and opinions that survived even to our own time. But soon after 1844, when the gold discoveries came prominently before the world, capital began to accumulate rapidly, and the whole character of banking, metropolitan and provincial, underwent a great change. Banks were no longer places for issuing 1*l.* or 5*l.* notes, but they became depositories of capital, which had found employment in the most profitable way, so that the mere circulation of bank notes had become almost insignificant, while the circulation of bills of exchange had enormously increased. In a rude state of society the only circulation possible was in the metals. When finance came to be a little better understood, the element of credit was introduced, banks were established, and a paper circulation followed. Then came the bill of exchange, which was the *primum mobile* of the commercial system. Then banks, instead of being mere shops for circulating notes, became depositories of capital, which capital was made the foundation of a still more extensive ramification of credit, in which the cheque played so important a part. By the set-off which took place in the Clearing House between 4 and 5 o'clock, a hundred millions a-day were disposed of without the intervention of coin or notes. This was a process that ought to be encouraged as much as possible, and which admitted of still larger development, especially in the direction of the smaller transactions now settled by coin or notes. It could be carried on in England under the most favourable circumstances as compared with any other country. In France the political insecurity rendered the adoption of the English system of banking impossible; since bankers would not make themselves responsible for millions of deposits, not having forty-eight hours' security against a revolution. The thing now to be attended to was not the mere circulation, but the variations in the demand for capital as indicated by the variations in the rate of interest. It was becoming obvious to every one that the state of the money market means the rate of interest and the state of credit as affected by that rate of interest. The ultimate regulating power was the bullion reserve, which, after all, was only found in possession of the Bank of England. It was right that there should be only one centre of bullion reserve. It was a great barbarism for bankers, provincial or metropolitan, to keep large quantities of gold and silver on their premises. If a country banker had a surplus which he could not usefully employ, he sent it to his London agent. If the London agent could not employ it in discounting bills or making advances, he sent it to his credit with the Bank of England. There was the ultimate bullion reserve, and upon the variations of that reserve depended the oscillations in the state of the money market. The great point, therefore, was, not to trouble about the fantastic, obsolete notions as to bank note circulation and the regulation of the currency, but to maintain at the Bank of England a sufficiently large reserve to meet the oscillations produced by the trade of the country, regarding it as the centre of the commerce of the world. It was impossible to carry on an enormous trade in this country, or anywhere else, without every now and then requiring that the precious metals should pass to a certain extent from one country to another; but happily, it was the tendency of modern times to diminish that most unprofitable of all

trades. Gold and silver were not like sugar or cotton or jute, upon which there was a profit to be made in passing from the producer to the consumer. The mere trade, therefore, in the passage of bullion from one country to another was something to be deplored and deprecated; still it was sometimes necessary, as when there were foreign loans to be negotiated, or foreign advances made, or when there was a failure in some particular commodity. Therefore there must be a central reserve where gold and silver could be had immediately; so that in the event of a telegram being received at 11 o'clock the bullion might be invoiced and consigned before half-past 11 o'clock. Telegraphic communication had impressed an entirely new character upon the trade of the country. Thirty years ago, when an order for bullion was received, say from Paris, the bullion merchant could turn round at his leisure and make inquiries. That would not do in the present day; orders must be attended to immediately; therefore the question of the central reserve was more vital than ever it was. The idea of withdrawing any quantity of coin from the active circulation of the country was absurd; you could no more accomplish it than you could reach the moon. Mr. Palgrave had referred to the presence among us of large foreign banking institutions. Some persons looked upon them with jealousy, but he (Mr. Newmarch) welcomed them. We could not have too many of them. Why did they come among us? First, for their own benefit; but they could not benefit themselves without doing us good. They introduced capital, skill, and intelligence, and that was the kind of competition we should desire. This country was strong, not because it had any particular monopoly, but because it did and dared more than any other country in the world. The presence of intelligent foreigners among us, bringing with them new modes of thought and action, was an undoubted advantage. No doubt they sometimes embarked in enterprises which others might think venturesome, but on the whole nothing could be more satisfactory than the career of those great foreign institutions in London. The influence of these institutions, as well as of the powerful banks connected with our colonies, was as yet but imperfectly understood; he believed that that influence affected the London money market and English finance even to a greater extent than Mr. Palgrave had stated.

MR. FREDERICK HENDRIKS said that we were looking with increasing jealousy at the proportion of bullion reserve to banking capital and deposits. That after all was a commercial question. The figures given, however, were rather reassuring on that point. In 1851, according to Mr. Newmarch's estimate, the capital and deposits of banks in the United Kingdom amounted to 260,000,000*l.*; and in 1872, according to the able analysis of Mr. Palgrave, to 828,000,000*l.*, a difference of 568,000,000*l.*, showing an increase of 218 per cent. In 1851 the amount of bullion and coin was 40,000,000*l.*, and in 1872 it had increased to 131,000,000*l.*, an increase of 227 per cent. So that the increase of bullion and coin had more than kept pace with the increase of capital and deposits. In fact the increase was almost in the exact ratio of the increase in the imports and exports of the United Kingdom. It was very reassuring, that in the midst of all this expanded industry and all these changed circumstances, a strict regard had been kept to the amount of bullion and coin. Certainly the conditions of the problem were altered. There was the greater danger, pointed out by Mr. Seyd, from the foreign element having so largely permeated our market. The great question was how to regulate with greater accuracy the effect of these drains, by some amended legislation upon the Bank Act, a subject which had recently been brought before this Society in a paper by Mr. Seyd. Mr. Palgrave had taken a simile from the waters of the Rhine; he

(Mr. Hendriks) would take a more homely illustration from the different inventions with regard to the movement of a watch. There was first the *horizontal movement*, which might be compared to the system in the Bank of England before the Act of 1844, where everything connected with the proportion of bullion to issue went on according to the discretion of the directors. That plan, although it might be called somewhat antiquated, had been continued in France with considerable success, and it might be suitable to a country where the trade was not exposed to so many disturbing influences as was the vast commerce of this kingdom. The amended plan of the Act of 1844 might be termed the *lever* system, a great deal turning in that, our present system, round the large amount, 15,000,000*l.*, of the "fiduciary account," as Mr. Seyd had called it, which meant the only circulation allowed to be issued as against Government securities in contradistinction to issues upon bullion. The system wanted to correct what he should call the "*compensating balance*" system—which was required to modify the effect of the present, frequent, and inconveniently sudden changes in the rate of discount. That of course was a matter of great difficulty, and upon which there would be naturally much diversity of opinion. Mr. Newmarch had always advocated the retention of a much larger amount of bullion permanently in the Bank. Others had recommended some system which should expand and contract automatically. Mr. Seyd's plan, as explained in his paper read to this Society in December last, might, perhaps, be too complicated in the working, but the concurrence of opinion seemed to be in favour of some change of that kind. Whoever invented a plan at once simple and effective, would confer a great benefit on the community at large.

MR. ERNEST SEYD said they must all be grateful to Mr. Palgrave for his lucid statement. It showed the satisfactory state of our trade, and it cast a light on our general policy in regard to bill business; it might also perhaps raise a question whether we might not here and there introduce an improvement. According to Mr. Palgrave's statement the imports amounted to 303,000,000*l.*, while the foreign bills amounted to 507,000,000*l.* The greater proportion of the difference of 200,000,000*l.* were bills drawn for import into foreign countries through credits granted here, in the East Indies, and other colonies; so-called "open credit" or "documentary" bills drawn upon London. That again was a satisfactory proof of our banking power. But it was a curious discrepancy that for our exports we only drew an amount stated by Mr. Palgrave at 73,000,000*l.* What was the cause of this, and what were its bearings in a national and economical point of view? Manufacturers and merchants in Birmingham and Manchester, shipping goods to foreigners, could receive payment by drawing bills on foreign debtors, or by means of remittances. For quickly settling the account, drawing bills was the best method and the cheapest; but the manufacturers insisted upon remittances simply because they did not know how to draw bills of exchange, or what to do with them. Further, English bankers discouraged the foreign bill business, because they did not know how to manage it. Some merchants and manufacturers had learned to draw bills in foreign currency; others drew in sterling, the exchange to be fixed by endorsement, but these were unsatisfactory and often led to disputes. Clean foreign bills drawn in foreign currency were more saleable than hybrid bills drawn in sterling by endorsement. The foreign bills were equal to our own in security.

MR. NEWMARCH remarked upon an observation made by Mr. Frederick Purdy, that the manufacturer did not like to take upon himself the risks of exchange. "My business," he said, "is to make engines or calico, and I understand what I

am going to do if I am to be paid in English money. I do not understand foreign exchanges, the result of which may be that 100*l.* to-day may be only 95*l.* by the time my contract is run out."

MR. PALGRAVE in replying, stated that he had not referred to foreign banks as competitors whom we should desire to exclude, he had alluded to them as a new element in banking arrangements for which necessary provision should be made. As fresh elements in our banking system arose, they called for a strengthening of our reserves. Provided this were done, these additions might afford valuable assistance to the commerce of the country.

## II.—*Underwriters' Statistics.*

FROM the *Economist*:—

"We are glad to see that Mr. Henry Jeula is supplying so many good arguments for the expediency of assisting the conduct of marine insurance business by means of statistics of losses. The essence of insurance is to strike an average of losses, and the underwriter in marine insurance, if his business is to be a solid one at all, must contrive to have a premium which will be equal to the average loss, and leave him a profit besides. In fixing the premium he will, of course, take into account the value of the interest or profit he may make on the money which the business will give him the use of, but the object must be distinctly kept in view. As a proof that statistics are possible, Mr. Jeula gives the following table of results obtained from the dissection of about  $2\frac{3}{4}$  millions of liability upon sailing vessels, and about  $2\frac{1}{2}$  millions of liability upon steamers, in "lines" of say from 100*l.* to 150*l.* each to the end of 1870 inclusive—

	Average Percentage upon Liability of Losses and Claims with Discounts.			
	Twelve Years' Average.	Thirteen Years' Average.	Fourteen Years' Average.	Fifteen Years' Average.
<i>Sailing Vessels—</i>				
Outward bound .....	1·50	1·46	1·46	1·50
Homeward ,,,	1·88	1·90	1·85	1·86
Mean .....	1·69	1·68	1·65	1·68
<i>Steamers—</i>				
Outward bound .....	0·43	0·41	0·41	0·42
Homeward ,,,	0·41	0·40	0·48	0·47
Mean .....	0·42	0·40	0·44	0·44

From this it follows that the maximum annual variation of loss did not amount to 10*d.* per cent. The proper course, as Mr. Jeula suggests, would be to classify the risks according to goods, ships, seasons, and voyages, and the great insurance companies, at least, ought to have ample means of obtaining good statistics. They might very usefully get together combined offices' experience tables on the model of the similar tables of the life assurance companies. The objections are that statistics are of no use, for the practical premium is determined by competition, and voyages are continually changing, the change caused by the Suez Canal being employed as

an illustration. But the objections do not come to much. In spite of competition the existence of good statistics would circulate a real knowledge among underwriters of what the premiums ought to be, and would have a real effect in keeping them at a proper level. The more prudent companies and underwriters would be quite certain to act upon their knowledge, and it would become discreditable to take much lower premiums. As to the changes of voyages, of course all such changes must be taken into account; but there is a sufficiency of established routes to make the statistics which it is possible to compile apply to the great bulk of insurance business. As steam business increases so will the number of regular routes, and there is thus a prospect of increasing certainty in the business, if the companies and Lloyd's will only take the trouble to compile the statistics."

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### III.—*Agricultural Returns of the United States.*

FROM the American Correspondent, 14th January, of the *Times*:—

"The Department of Agriculture at Washington has issued its December report. The crop of Indian corn of the United States is stated at 1,100,000,000 bushels, of greater value and better quality than usual. The highest average corn yield per acre was in Iowa, 40·8 bushels. Minnesota, California, and Texas gave the highest wheat average—18·7 and 18·5 bushels. California was the highest in rye—29·1 bushels; Nebraska in oats—40 bushels, also in barley—31·6 bushels, and in buckwheat—27·1 bushels; and Iowa in potatoes—133 bushels. In cotton Texas gave the highest average yield per acre, South Carolina coming next. The crop of cotton in the United States for 1872 is estimated at the same figure as in the last previous report of the Department, 3,450,000 bales of 465lbs. each. In ten cotton States there were 8,482,905 acres in cotton, showing an average yield of 188·7lb. per acre. The season is regarded as having been unpropitious, owing to local drought and insect depredations. The aggregate hay crop of the country is stated at 24,000,000 tons—a slight increase. The winter wheat is said to look well wherever the soil is in good tilth. Of the last Californian wheat crop, thousands of sacks are said to remain unthrashed in the fields, the store-houses being all full and no storage available, while not half ships enough are available at San Francisco to carry the wheat away, though freights are double those of last year. Silk culture is reported as quite successful at Utah, while jute culture is obtaining a foothold in several Southern States, the staple being reported equal to Indian jute. California raised 1,000 bales of cotton last year."

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## REGISTRATION OF THE UNITED KINGDOM.

## No. I.—ENGLAND AND WALES.

MARRIAGES—QUARTER ENDED SEPTEMBER, 1872.

BIRTHS AND DEATHS—QUARTER ENDED DECEMBER, 1872.

A.—*Serial Table of MARRIAGES, BIRTHS, and DEATHS, returned in the Years 1872-66, and in the QUARTERS of those Years.*

Calendar YEARS, 1872-66:—Numbers.

Years .....	'72.	'71.	'70.	'69.	'68.	'67.	'66.
Marriages No.	—	190,015	181,655	176,970	176,962	179,154	187,776
Births..... ,	824,646	797,143	792,787	773,381	786,858	768,349	753,870
Deaths .... ,	492,065	515,096	515,329	494,828	480,622	471,073	500,689

QUARTERS of each Calendar Year, 1872-66.

(I.) MARRIAGES:—Numbers.

Qrs. ended last day of	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	40,557	36,229	36,455	37,752	36,696	36,441	37,579
June ..... ,	50,197	48,652	46,720	43,202	45,364	45,589	48,577
September „,	49,806	46,636	43,900	43,978	43,509	44,086	46,257
December „,	—	58,498	54,580	52,038	51,393	53,038	55,363

(II.) BIRTHS:—Numbers.

Qrs. ended last day of	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	208,737	209,787	206,366	203,775	198,584	194,763	196,753
June ..... „,	208,711	200,877	203,615	188,618	202,839	199,660	192,437
September „,	201,105	192,986	192,521	190,394	192,583	190,782	179,086
December „,	206,093	193,493	190,285	190,594	192,852	183,144	185,594

(III.) DEATHS:—Numbers.

Qrs. ended last day of	'72.	'71.	'70.	'69.	'68.	'67.	'66.
March..... No.	134,992	138,603	143,773	133,096	119,676	134,008	138,136
June ..... „,	120,914	120,870	121,128	118,947	110,010	112,355	128,551
September „,	118,786	121,236	124,297	114,644	130,482	108,513	116,650
December „,	117,373	134,387	126,131	128,141	120,454	116,197	117,352

*Annual Rates of MARRIAGES, BIRTHS, and DEATHS, per 1,000 PERSONS LIVING in the Years 1872-66, and the QUARTERS of those Years.*

*Calendar YEARS, 1872-66:—General Ratios.*

YEARS.....	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
Estmtd. Popln. of England in thousands in middle of each Year....	23,075,	—	22,760,	22,457,	22,165,	21,882,	21,608,	21,343,
Persons Mar- ried .....	—	16·7	16·7	16·2	16·0	16·2	16·6	17·6
Births .....	35·7	35·3	35·0	35·3	34·9	36·0	35·6	35·3
Deaths.....	21·3	22·7	22·6	23·0	22·3	22·0	21·8	23·5

*QUARTERS of each Calendar Year, 1872-66.*

(I.) PERSONS MARRIED:—Ratio per 1,000.

Qrs. ended last day of	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March .....	14·1	13·8	12·9	13·2	13·8	13·5	13·7	14·3
June.....	17·5	16·9	17·1	16·7	15·6	16·6	16·9	18·3
September .....	17·1	16·3	16·3	15·5	15·7	15·8	16·2	17·2
December .....	—	19·8	20·4	19·2	18·6	18·6	19·5	20·6

(II.) BIRTHS:—Ratio per 1,000.

Qrs. ended last day of	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March .....	36·3	37·0	37·4	37·3	37·3	36·4	36·6	37·4
June.....	36·3	36·3	35·4	36·4	34·1	37·2	37·1	36·2
September .....	34·6	34·1	33·6	34·0	34·1	34·9	35·0	33·3
December .....	35·4	34·0	33·7	33·6	34·1	35·0	33·6	34·5

(III.) DEATHS:—Ratio per 1,000.

Qrs. ended last day of	'72.	Mean '62-71.	'71.	'70.	'69.	'68.	'67.	'66.
March .....	23·5	25·2	24·7	26·0	24·4	21·9	25·2	26·2
June.....	21·0	21·8	21·3	21·6	21·5	20·2	20·9	24·2
September .....	20·4	21·1	21·1	22·0	20·5	23·7	19·9	21·7
December .....	20·2	22·4	23·4	22·3	22·9	21·8	21·3	21·8

B.—Comparative Table of CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE in each of the Nine QUARTERS ended December, 1872.

1 Quarters ending	2 Average Price of Consols (for Money).	3 Average Rate of Bank of England Dis- count.	4 Average Price of Wheat per Quarter in England and Wales.	5 Average Prices of Meat per lb. at the Metropolitan Meat Market (by the Carcase), with the Mean Prices.		7 Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	8 Pauperism.		10 Mean Tem- pera- ture.
				Beef.	Mutton.		In-door.	Out-door.	
				s. d.	d. d. d.		s. s. s.		
1870 Dec. 31	£ 92 $\frac{5}{8}$	2·5	50 1	5—7 $\frac{3}{4}$ 6 $\frac{3}{8}$	5 $\frac{1}{4}$ —8 6 $\frac{5}{8}$	50—90 70	150,729	802,291	41·6
1871 Mar. 31	92 $\frac{1}{8}$	2·7	53 7	5—7 $\frac{3}{4}$ 6 $\frac{3}{8}$	5 $\frac{1}{4}$ —7 $\frac{3}{4}$ 6 $\frac{1}{2}$	75—100 87	160,984	878,892	40·2
June 30	93 $\frac{3}{8}$	2·5	59 9	5 $\frac{1}{4}$ —7 $\frac{3}{4}$ 6 $\frac{1}{2}$	5 $\frac{1}{2}$ —8 $\frac{1}{2}$ 7	51—76 63	140,338	805,519	51·5
Sept. 30	93 $\frac{3}{8}$	2·2	57 9	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	5 $\frac{3}{4}$ —9 7 $\frac{1}{2}$	60—77 68	132,065	769,482	61·3
Dec. 31	93	4·2	56 3	5—7 $\frac{3}{4}$ 6 $\frac{1}{2}$	5 $\frac{1}{2}$ —8 $\frac{1}{4}$ 6 $\frac{3}{4}$	75—104 89	140,955	758,474	41·8
1872 Mar. 31	92 $\frac{4}{8}$	3·0	55 4	5—7 $\frac{1}{4}$ 6 $\frac{1}{8}$	5 $\frac{3}{4}$ —8 $\frac{1}{2}$ 7 $\frac{1}{8}$	80—120 100	149,599	776,793	43·6
June 30	92 $\frac{7}{8}$	4·0	56 8	5 $\frac{1}{4}$ —7 $\frac{1}{2}$ 6 $\frac{3}{8}$	6—8 $\frac{3}{4}$ 7 $\frac{3}{8}$	124—150 137	134,412	724,463	52·8
Sept. 30	92 $\frac{4}{8}$	3·5	58 11	5 $\frac{1}{4}$ —8 6 $\frac{5}{8}$	6 $\frac{1}{4}$ —9 $\frac{1}{4}$ 7 $\frac{3}{4}$	105—133 119	126,377	681,987	61·1
Dec. 31	92 $\frac{2}{8}$	5·9	57 3	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	6—8 $\frac{1}{2}$ 7 $\frac{1}{4}$	153—187 170	138,648	675,598	45·3

C.—General Average Death-Rate Table:—Annual Rate of Mortality to 1,000 of the Population in the Eleven Divisions of England.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1861-70.	1871. Quarters ending		1872. Quarters ending			
		Sept.	Dec.	March.	June.	Sept.	Dec.
	22·4	21·1	23·4	23·5	21·0	20·4	20·2
I. London .....	24·3	22·9	25·8	24·0	20·7	21·4	19·8
II. South-Eastern counties ....	19·1	17·8	17·6	19·2	17·0	16·9	16·2
III. South Midland ,....	20·2	18·7	19·9	20·8	18·4	18·3	18·0
IV. Eastern counties .....	20·1	20·1	20·8	21·1	17·8	17·5	18·1
V. South-Western counties ....	19·9	17·0	21·1	21·4	19·1	16·1	17·8
VI. West Midland ,....	21·8	19·3	23·4	22·9	21·1	19·6	20·8
VII. North Midland ,....	20·8	19·5	21·3	21·9	21·3	21·4	19·3
VIII. North-Western ,....	26·3	25·0	27·9	26·6	23·8	24·0	23·8
IX. Yorkshire .....	24·0	22·8	24·5	25·5	23·7	23·9	22·5
X. Northern counties .....	22·7	27·6	27·8	27·3	23·3	22·9	22·3
XI. Monmouthshire and Wales	21·6	17·9	21·7	23·9	21·9	18·0	19·9

Note.—The rates of mortality in this table have been calculated on populations based upon the recently enumerated numbers, and will not therefore correspond with those published in previous returns.

D.—*Special Average Death-Rate Table:—ANNUAL RATE OF MORTALITY per 1,000 in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1872-70.*

	Area in Statute Acres.	Population Enumerated.	Quarters ending	Annual Rate of Mortality per 1,000 in each Quarter of the Years			
				1872.	Mean '62-'71.	1871.	1870.
				1871.			
In 131 Districts, and 58 Sub-districts, comprising the <i>Chief Towns</i> .....	3,287,151	12,900,297	March .. June .... Sept. .... Dec. ....	25·4	27·5	26·8	27·7
				22·6	23·4	23·0	22·7
				23·0	23·8	24·0	23·9
			Year ....	22·0	25·1	26·4	24·3
				23·3	25·0	25·0	24·7
				18·6	19·7	19·5	20·6
In the remaining Dis- tricts and Sub-districts of England and Wales, comprising chiefly <i>Small Towns and Country Parishes</i> .....	34,037,732	9,803,811	March .. June .... Sept. .... Dec. ....	20·9	22·6	21·9	24·0
				18·9	19·8	19·1	20·1
				17·0	17·6	17·4	19·1
				17·7	18·8	19·5	19·1

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year, 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

E.—*Special Town Table:—POPULATION; BIRTHS, DEATHS; MEAN TEMPERATURE and RAINFALL in the Fourth Quarter of 1872, in TWENTY-ONE Large Towns.*

Cities, &c.	Estimated Population in the Middle of the Year 1872.	Births in 13 Weeks ending 28th Dec., 1872.	Deaths in 13 Weeks ending 28th Dec., 1872.	Annual Rate to 1,000 Living during the 13 Weeks ending 28th Dec.		Mean Temperature in 13 Weeks ending 28th Dec., 1872.	Rainfall in Inches in 13 Weeks ending 28th Dec., 1872.
				Births.	Deaths.		
Total of 21 towns in U. K.	7,393,052	68,034	42,400	36·9	23·0	43·7	12·54
London .....	3,311,298	29,010	16,336	35·1	19·8	45·5	11·20
Portsmouth .....	115,455	947	562	32·9	19·5	45·2	14·45
Norwich .....	81,105	656	516	32·5	25·5	43·5	10·94
Bristol .....	186,428	1,609	933	34·6	20·1	—	—
Wolverhampton .....	69,268	674	421	39·1	24·4	43·2	12·62
Birmingham .....	350,164	3,608	2,223	41·4	25·5	44·0	13·18
Leicester .....	99,143	1,030	604	41·7	24·5	43·4	11·28
Nottingham .....	88,225	766	497	34·8	22·6	43·4	10·09
Liverpool .....	499,897	4,742	3,291	38·1	26·4	44·3	13·11
Manchester .....	352,759	3,441	2,563	39·2	29·2	—	—
Salford .....	127,923	1,352	807	42·3	25·3	43·2	11·12
Oldham .....	84,004	816	750	39·0	35·8	—	—
Bradford .....	151,720	1,532	915	40·5	24·2	44·7	12·22
Leeds .....	266,564	2,806	1,834	42·3	27·6	44·1	11·71
Sheffield .....	247,847	2,662	1,471	43·1	23·8	43·5	13·06
Hull .....	124,976	1,243	807	39·9	25·9	42·7	11·17
Sunderland .....	100,665	1,210	646	48·2	25·8	—	—
Newcastle-on-Tyne .....	130,764	1,340	855	41·1	26·2	—	—
Edinburgh .....	205,146	1,572	1,114	30·8	21·8	41·9	13·95
Glasgow .....	489,136	5,018	3,400	41·2	27·9	41·8	15·66
Dublin .....	310,565	2,000	1,855	25·8	24·0	43·7	12·47

F.—*Divisional Table:—MARRIAGES Registered in Quarters ended 30th September, 1872-70; and BIRTHS and DEATHS in Quarters ended 31st December, 1872-70.*

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 POPULATION, 1871. (Persons.)	4 5 6 MARRIAGES in Quarters ended 30th September.			
			1872.	1871.	1870.	
			No.	No.	No.	
ENGLD. & WALES.... <i>Totals</i>	37,324,883	22,704,108	49,806	46,636	43,909	
i. London .....	77,997	3,251,804	8,892	8,572	7,887	
ii. South-Eastern .....	4,065,935	2,166,217	3,830	3,752	3,572	
iii. South Midland .....	3,201,290	1,442,567	2,521	2,229	2,239	
iv. Eastern .....	3,214,099	1,218,257	1,953	1,811	1,772	
v. South-Western .....	4,993,660	1,879,898	3,274	3,159	3,121	
vi. West Midland .....	3,862,732	2,720,003	5,892	5,401	5,090	
vii. North Midland .....	3,543,397	1,406,823	2,719	2,527	2,470	
viii. North-Western .....	2,000,227	3,388,370	9,043	8,455	7,713	
ix. Yorkshire .....	3,654,636	2,395,299	5,438	5,347	4,872	
x. Northern .....	3,492,322	1,414,066	3,390	2,835	2,765	
xi. Monmthsh. & Wales	5,218,588	1,420,804	2,854	2,521	2,408	
7	8	9	10	11	12	
DIVISIONS. (England and Wales.)	BIRTHS in Quarters ended 31st December.			DEATHS in Quarters ended 31st December.		
	1872.	1871.	1870.	1872.	1871.	1870.
ENGLD. & WALES.... <i>Totals</i>	No. 206,093	No. 193,493	No. 190,026	No. 117,373	No. 134,387	No. 126,049
i. London .....	29,010	27,889	27,670	16,336	20,991	19,339
ii. South-Eastern .....	17,629	16,987	16,465	9,024	9,663	10,402
iii. South Midland.....	12,446	11,610	11,533	6,649	7,239	7,641
iv. Eastern .....	10,038	9,374	9,289	5,615	6,398	6,168
v. South-Western .....	14,342	14,051	13,512	8,460	10,002	10,051
vi. West Midland .....	25,676	23,921	23,077	14,427	16,082	14,126
vii. North Midland.....	12,584	12,180	11,867	6,911	7,558	7,305
viii. North-Western .....	33,672	30,656	29,960	20,676	23,899	22,026
ix. Yorkshire .....	23,705	21,869	21,995	13,907	14,830	14,369
x. Northern .....	14,904	13,300	13,225	8,172	9,956	7,461
xi. Monmthsh. & Wales	12,087	11,656	11,433	7,196	7,769	7,161

## G.—General Meteorological Table, Quarter ended December, 1872.

[Abstracted from the particulars supplied to the Registrar-General by JAMES GLAISHER, Esq., F.R.S., &amp;c.]

1872. Months.	Temperature of										Elastic Force of Vapour.	Weight of Vapour in a Cubic Foot of Air.		
	Air.		Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames					
	Mean.	Diff. from Aver- age of 101 Years.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.					
Oct. ...	o 47·8	o -1·8	o -2·5	o 46·5	o -1·8	o 45·0	o -1·2	o 15·6	o +0·8	o 51·0	In. ·299	In. -·015	Gr. 3·4	Gr. -0·3
Nov. ...	45·3	+3·0	+1·7	43·6	+2·3	41·7	+2·2	10·0	-1·7	46·0	·264	+·017	3·1	+0·3
Dec. ...	42·9	+3·8	+2·7	41·4	+2·7	39·7	+2·8	8·3	-1·2	41·5	·244	+·023	2·8	+0·2
Mean ...	45·3	+1·7	+0·6	43·8	+1·1	42·1	+1·3	11·3	-0·7	46·2	·269	+·008	3·1	+0·1

  

1872. Months.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hor- izon- tal Move- ment of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Amnt.	Diff. from Aver- age of 57 Years.	At or below 30°.	Be- tween 30° and 40°.	Above 40°.	Number of Nights it was		
	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Mean.	Diff. from Aver- age of 31 Years.	Amnt.	Diff. from Aver- age of 57 Years.	At or below 30°.	Be- tween 30° and 40°.	Above 40°.	Low- est Read- ing at Night.	Highest Read- ing at Night.	
Oct. ...	91	+ 4	In. 29·533	In. -·171	Gr. 539	Gr. 0	In. 4·3	In. +1·5	Miles. 234	10	14	7	25·4	49·0
Nov. ...	87	- 1	29·511	- ·252	541	- 7	2·9	+0·6	416	6	19	5	26·8	46·2
Dec. ...	88	0	29·413	- ·397	542	- 10	4·1	+2·1	346	8	19	4	17·9	43·0
Mean ...	89	+ 1	29·486	- ·273	541	- 6	Sum 11·3	Sum +4·2	Mean 332	Sum 24	Sum 52	Sum 16	Lowest 17·9	Highest 49·0

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

The mean temperature of October was  $47^{\circ}\cdot 8$ , being  $1^{\circ}\cdot 8$  lower than the average of the preceding 101 years, and lower than in any year back to 1850, when the value recorded was  $47^{\circ}\cdot 0$ .

The mean temperature of November was  $45^{\circ}\cdot 3$ , being  $3^{\circ}\cdot 0$  higher than the average of the preceding 101 years, and higher than in any preceding year since 1863 ( $45^{\circ}\cdot 7$ ) and then again to 1857 ( $45^{\circ}\cdot 8$ ).

The mean temperature of December was  $42^{\circ}\cdot 9$ , being  $3^{\circ}\cdot 8$  higher than the average of the preceding 101 years, higher than in the years 1869-71, but lower than in 1868, when  $46^{\circ}\cdot 0$  was recorded.

The mean high day temperatures were respectively  $1^{\circ}\cdot 9$  and  $2^{\circ}\cdot 0$  higher than their averages in November and December, but  $1^{\circ}\cdot 8$  lower in October.

The mean low night temperatures were higher than their averages in November and December by  $3^{\circ}\cdot 7$  and  $3^{\circ}\cdot 2$  respectively, but lower in October by  $2^{\circ}\cdot 7$ .

Therefore the days and nights were cold in October, and warm in November and December.

## H.—Special Meteorological Table, Quarter ended 31st December, 1872.

1 NAMES OF STATIONS.	2 Mean Pressure of Dry Air reduced to the Level of the Sea. in.	3 Highest Reading of the Thermo- meter.	4 Lowest Reading of the Thermo- meter.	5 Range of Tem- perature in the Quarter.	6 Mean Monthly Range of Tem- perature.	7 Mean Daily Range of Tem- perature.	8 Mean Tem- perature of the Air.	9 Mean Degree of Hu- midity.
Guernsey.....	29·379	63·5	34·5	29·0	21·3	7·3	49·0	86
Osborne .....	29·394	64·2	26·2	38·0	29·6	11·8	46·1	92
Barnstaple .....	29·346	65·0	27·0	38·0	29·8	10·1	47·4	88
Royal Observatory	29·391	66·6	27·1	39·5	31·8	11·3	45·3	89
Royston .....	29·219	65·6	27·3	38·3	30·3	12·4	44·4	91
Norwich .....	29·386	65·0	27·5	37·5	38·7	11·2	43·9	92
Llandudno .....	29·329	64·0	30·5	33·5	28·0	9·8	46·1	82
Derby .....	29·351	61·0	26·0	35·0	29·3	10·2	43·8	90
Stonyhurst .....	29·343	61·9	24·5	37·4	30·6	9·7	43·7	87
Leeds .....	29·361	64·0	27·0	37·0	32·0	10·8	44·0	85
North Shields.....	29·390	67·0	26·2	40·8	28·9	9·5	43·4	85

10 NAMES OF STATIONS.	11	12	13	14	15 WIND.	16 Mean Amount of Cloud.	17 RAIN.	18
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount Collected.
		N.	E.	S.	W.			in.
Guernsey.....	1·8	4	4	12	10	6·7	80	25·24
Osborne .....	0·1	4	3	14	9	6·9	67	16·34
Barnstaple .....	1·1	5	4	11	11	4·8	78	19·36
Royal Observatory	0·7	5	4	11	11	7·0	67	11·32
Royston .....	—	—	—	—	—	6·9	71	9·55
Norwich .....	—	4	5	13	8	—	55	10·90
Llandudno .....	1·0	7	3	6	15	6·5	66	17·62
Derby .....	—	6	5	11	9	—	67	10·70
Stonyhurst .....	—	5	6	10	10	7·9	89	14·79
Leeds .....	1·2	8	4	7	12	8·2	78	11·56
North Shields.....	1·8	8	4	7	11	7·1	71	14·53

NOTE.—About Scotland.

I.—*Serial Table.*

II.—*Special Average Table.*

III.—*Bastardy Table.*

IV.—*Divisional Table.*

\*.\* The Registrar-General for Scotland has been unable to supply the particulars for these tables, in consequence of the printers' strike in that country.—ED. S. J.

### No. III.—GREAT BRITAIN AND IRELAND.

SUMMARY of MARRIAGES, in the Quarter ended 30th September, 1872; and  
BIRTHS and DEATHS, in the Quarter ended 31st December, 1872.

COUNTRIES.	[000's omitted].		Marriages.	Per 1,000 of Population.	Births.	Per 1,000 of Population.	Deaths.	Per 1,000 of Population.
	Area in Statute Acres.	Popula- tion, 1871. (Persons.)						
England and Wales .....	37,325,	22,704,	49,806	2·2	206,093	9·51	117,373	5·2
Scotland .....	19,639,	3,359,	5,891	1·8	29,460	8·8	18,759	5·6
Ireland .....	20,323,	5,403,	5,407	1·0	34,093	6·3	22,434	4·2
GREAT BRITAIN AND IRELAND }	77,287,	31,466,	61,104	1·6	269,646	8·7	158,566	5·0

Note.—The numbers against Ireland represent the marriages, births, and deaths that the local registrars have succeeded in recording; but how far the registration approximates to absolute completeness, does not at present appear to be known. It will be seen that the Irish ratios of births and deaths are much under those of England and Scotland.—ED. S. J.

de of United Kingdom, 1872-71-70.—Distribution of Exports\* from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.

Merchandise (excluding Gold and Silver), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Nine Months.					
	1872.		1871.		1870.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
<b>I.—FOREIGN COUNTRIES:</b>						
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	25,546,	8,624,	23,944,	7,754,	19,720,	8,706,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	32,707,	40,051,	34,996,	35,308,	28,169,	25,277,
Southern Europe; viz., France, Portugal with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries) .....	39,633,	18,213,	29,894,	18,405,	33,078,	13,427,
Eastern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	5,132,	7,075,	6,042,	6,926,	4,076,	6,776,
Middle East; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	16,225,	10,729,	17,008,	9,848,	16,009,	12,365,
North Africa; viz., Tripoli, Tunis, Algeria and Morocco .....	837,	277,	685,	274,	363,	332,
Western Africa .....	1,394,	800,	1,448,	773,	1,008,	704,
Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands .....	98,	151,	194,	104,	70,	156,
Oriental Seas, Siam, Sumatra, Java, Philippines; other Islands .....	1,533,	897,	1,489,	1,046,	1,399,	1,219,
South Sea Islands .....	95,	28,	34,	23,	63,	32,
China, including Hong Kong .....	9,839,	8,988,	8,895,	8,630,	6,536,	8,094,
United States of America .....	41,959,	32,646,	46,611,	26,340,	37,537,	20,815,
Mexico and Central America .....	1,375,	740,	1,025,	976,	1,011,	825,
Caribbean West Indies and Hayti .....	4,890,	3,113,	2,955,	2,788,	4,998,	2,976,
South America (Northern), New Granada, Venezuela, and Ecuador .....	1,063,	2,690,	945,	2,127,	714,	1,718,
," (Pacific), Peru, Bolivia, Chili, and Patagonia ....	8,152,	4,166,	6,321,	3,076,	6,200,	3,397,
," (Atlantic) Brazil, Uruguay, and Buenos Ayres .....	10,058,	9,523,	6,879,	6,974,	6,441,	6,302,
Whale Fisheries; Grnlnd., Davis' Straits, Southn. Whale Fishery, & Falkland Islands .....	91,	7,	109,	8,	141,	1,
Total—Foreign Countries .....	200,627,	148,718,	189,474,	131,380,	167,533,	113,123,
<b>II.—BRITISH POSSESSIONS:</b>						
British India, Ceylon, and Singapore .....	32,126,	16,689,	24,729,	15,185,	20,275,	17,299,
Austral. Cols.—N. So. W., Vict., and Queensld.	9,074,	6,666,	8,361,	4,840,	8,989,	5,116,
," " So. Aus., W. Aus., Tasm., and N. Zealand .....	5,156,	2,649,	4,396,	2,012,	3,607,	1,929,
British North America .....	5,105,	8,900,	5,132,	7,051,	5,171,	6,001,
," W. Indies with Btsh. Guiana & Honduras .....	5,943,	2,396,	6,259,	2,160,	5,233,	2,599,
," Cape and Natal .....	2,558,	2,740,	2,084,	1,464,	1,890,	1,325,
C. W. Co. of Af., Ascension and St. Helena .....	380,	596,	566,	471,	257,	488,
Juritius .....	1,192,	427,	519,	402,	815,	368,
Annal Islands .....	513,	533,	441,	613,	369,	526,
Total—British Possessions .....	62,047,	41,596,	52,487,	34,198,	46,606,	35,611,
General Total .....	£ 262,674,	190,314,	241,961,	165,578,	214,139,	148,734,

\* i.e., British and Irish produce and manufactures.

**IMPORTS.—(United Kingdom.)—Whole Years, 1872-71-70-69-68.—Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.**

(Whole Years.)	[000's omitted.]	1872.	1871.	1870.	1869.	1868.
FOREIGN ARTICLES IMPORTED.						
RAW MATLS.— <i>Textile, &amp;c.</i>		£	£	£	£	£
Cotton Wool ....	53,617,	55,767,	53,398,	56,852,	55,199,	
Wool (Sheep's) ..	19,862,	19,565,	16,101,	14,940,	15,304,	
Silk*.....	14,501,	16,065,	22,954,	18,289,	19,349,	
Flax .....	4,998,	5,791,	5,979,	4,179,	5,098,	
Hemp .....	6,266,	6,480,	4,424,	4,122,	4,030,	
Indigo .....	2,479,	907,	2,721,	3,083,	2,854,	
	<u>101,723,</u>	<u>104,575,</u>	<u>105,577,</u>	<u>101,465,</u>	<u>101,834,</u>	
“ “ <i>Various.</i>						
Hides .....	6,733,	5,001,	4,584,	3,299,	3,624,	
Oils .....	4,649,	5,093,	4,259,	4,340,	4,035,	
Metals .....	9,207,	9,463,	5,370,	5,336,	5,198,	
Tallow .....	2,835,	3,112,	3,292,	2,770,	2,944,	
Timber.....	15,753,	12,081,	11,722,	10,109,	10,279,	
	<u>37,177,</u>	<u>34,749,</u>	<u>29,227,</u>	<u>25,854,</u>	<u>26,080,</u>	
“ “ <i>Agreblt.</i>						
Guano .....	1,183,	1,994,	3,477,	2,641,	1,977,	
Seeds   .....	7,278,	8,106,	4,016,	3,647,	4,348,	
	<u>8,461,</u>	<u>10,100,</u>	<u>7,493,</u>	<u>6,288,</u>	<u>6,325,</u>	
TROPICAL, &c., PRODUCE.						
Tea .....	12,982,	11,658,	10,095,	10,319,	12,431,	
Coffee .....	5,295,	5,407,	4,943,	4,927,	4,858,	
Sugar & Molasses	18,490,	18,572,	17,549,	15,928,	15,024,	
Tobacco .....	2,801,	3,705,	2,153,	2,250,	2,410,	
Rice .....	3,474,	2,321,	2,156,	2,837,	2,895,	
Fruits   .....	3,916,	3,247,	2,157,	2,804,	2,513,	
Wines .....	7,722,	7,070,	4,817,	5,266,	5,441,	
Spirits .....	2,192,	2,896,	3,109,	2,012,	2,086,	
	<u>56,872,</u>	<u>54,876,</u>	<u>46,979,</u>	<u>46,343,</u>	<u>47,658,</u>	
FOOD .....						
Grain and Meal .	50,987,	42,404,	34,197,	37,252,	39,228,	
Provisions .....	18,912,	18,219,	15,856,	16,203,	13,859,	
	<u>69,899,</u>	<u>60,623,</u>	<u>50,053,</u>	<u>53,455,</u>	<u>53,087,</u>	
Remainder of Enumerated Articles ....	44,283,	36,956,	16,687,	17,212,	14,632,	
TOTAL ENUMERATED IMPORTS ....	318,415,	301,879,	256,016,	250,617,	249,616,	
Add for UNENUMERATED IMPORTS (say)	34,960,	24,955,	64,004,	62,654,	62,404,	
TOTAL IMPORTS .....	353,375,	326,834,	320,020,	313,271,	312,020,	

\* "Silk," inclusive of manufactured silk, "not made up."

**EXPORTS.—(United Kingdom.)—Whole Years, 1872-71-70-69-68.—Declared Real Value, at Port of Shipment, of Articles of BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.**

(Whole Years.) BRITISH PRODUCE, &c., EXPORTED.	[000's omitted.]	1872.	1871.	1870.	1869.	1868.
		£	£	£	£	£
<b>MANFRS.—Textile.</b> Cotton Manufactures ..		63,419,	57,636,	56,727,	53,002,	52,832,
" Yarn .....		16,710,	15,055,	14,683,	14,158,	14,709,
Woollen Manufactures		32,384,	27,185,	21,651,	22,625,	19,526,
" Yarn .....		6,110,	6,102,	5,176,	5,858,	6,376,
Silk Manufactures.....		2,189,	2,054,	2,441,	2,049,	2,107,
" Yarn .....		1,895,	1,270,	160,	213,	215,
Linen Manufactures ....		8,248,	7,521,	7,378,	6,798,	7,094,
" Yarn .....		2,142,	2,220,	2,234,	2,329,	2,309,
		133,097,	119,043,	110,450,	107,032,	105,168,
<b>" Sewed.</b> Apparel .....		3,095,	2,699,	2,204,	2,405,	2,290,
Haberdy. and Mllnry.		6,629,	5,920,	4,814,	4,583,	4,476,
		9,724,	8,619,	7,018,	6,988,	6,766,
<b>METALS, &amp;c.</b> ..... Hardware .....		5,089,	4,022,	4,513,	4,413,	3,846,
Machinery .....		8,199,	5,942,	5,287,	5,102,	4,724,
Iron .....		36,061,	26,149,	21,081,	19,519,	15,022,
Copper and Brass.....		3,626,	3,268,	3,062,	3,586,	3,210,
Lead and Tin .....		1,760,	1,623,	4,288,	4,186,	3,600,
Coals and Culm .....		10,444,	6,267,	5,507,	5,069,	5,356,
		65,179,	47,271,	43,738,	41,875,	35,758,
<b>Ceramic Manufcts.</b> Earthenware and Glass		3,113,	2,610,	2,524,	2,664,	2,432,
<b>Indigenous Mnfrs.</b> Beer and Ale..... and Products.		2,085,	1,871,	1,878,	1,896,	1,866,
Butter .....		307,	328,	316,	270,	272,
Cheese .....		83,	96,	110,	110,	103,
Candles .....		223,	181,	116,	161,	202,
Salt.....		529,	468,	381,	431,	485,
Spirits .....		224,	201,	179,	209,	169,
Soda .....		—	1,753,	1,486,	1,379,	1,505,
		3,451,	4,898,	4,466,	4,456,	4,602,
<b>Various Manufcts.</b> Books, Printed .....		883,	723,	630,	675,	686,
Furniture .....		—	—	222,	243,	200,
Leather Manufactures		3,664,	3,662,	2,622,	2,631,	2,433,
Soap .....		304,	236,	219,	216,	257,
Plate and Watches ...		232,	192,	552,	507,	409,
Stationery .....		661,	532,	488,	497,	418,
		5,744,	5,345,	4,733,	4,769,	4,405,
Remainder of Enumerated Articles .....		19,855,	18,149,	15,534,	12,335,	11,252,
Unenumerated Articles.....		15,798,	13,384,	11,178,	9,926,	9,080,
<b>TOTAL EXPORTS.....</b>		255,961,	219,319,	199,641,	190,045,	179,463,

**SHIPPING.—(United Kingdom.)—Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the Twelve Months ended December, 1872, as compared with Corresponding Months of Years 1871 and 1870.**

**GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—*Computed Real Value for the Whole Years, 1872-71-70.***

[000's omitted.]

(Whole Years.)	1872.		1871.		1870.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
<b>Imported from:—</b>						
Australia .....	5,983,	31,	6,899,	21,	6,478,	7,
So. Amca. and W. Indies .....	813,	2,800,	1,172,	3,403,	1,924,	3,760,
United States and Cal. ....	8,148,	4,618,	6,493,	5,674,	6,994,	3,387,
	14,944,	7,449,	14,564,	9,098,	15,396,	7,154,
France.....	2,124,	923,	3,702,	1,089,	316,	1,212,
Germany, Holl. & Belg. ....	772,	2,517,	830,	423,	455,	41,
Prtgl., Spain, and Gbrltr.....	68,	60,	58,	55,	55,	104,
Mita., Trky., and Egypt .....	103,	54,	221,	103,	1,177,	43,
China .....	—	62,	1,	3,068,	62,	482,
West Coast of Africa	109,	7,	137,	5,	116,	7,
All other Countries....	217,	95,	2,100,	2,686,	1,230,	1,606,
<i>Totals Imported....</i>	<i>18,337,</i>	<i>11,167,</i>	<i>21,613,</i>	<i>16,527,</i>	<i>18,807,</i>	<i>10,649,</i>
<b>Exported to:—</b>						
France.....	1,040,	871,	1,569,	1,240,	3,505,	559,
Germany, Holl. & Belg. ....	8,560,	1,773,	2,069,	3,032,	3,513,	5,537,
Prtgl., Spain, and Gbrltr.....	1,674,	1,188,	1,907,	1,070,	354,	337,
	11,274,	3,832,	5,545,	5,342,	7,372,	6,433,
Ind. and China (via Egypt) .....	1,006,	5,678,	1,406,	3,041,	1,159,	1,996,
Danish West Indies .....	—	—	—	—	—	—
United States .....	—	—	114,	1,	73,	21
South Africa .....	1,390,	111,	1,143,	59,	161,	—
Mauritius .....	—	—	—	—	—	—
Brazil .....	397,	—	2,121,	—	107,	—
All other Countries....	5,682,	966,	10,369,	4,619,	1,141,	456,
<i>Totals Exported....</i>	<i>19,749,</i>	<i>10,587,</i>	<i>20,698,</i>	<i>13,062,</i>	<i>10,013,</i>	<i>8,906,</i>
<i>Excess of Imports ....</i>	<i>—</i>	<i>580,</i>	<i>915,</i>	<i>3,465,</i>	<i>8,794,</i>	<i>1,743,</i>
<i>,, Exports ....</i>	<i>1,412,</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>

## REVENUE.—(UNITED KINGDOM.)—31ST DECEMBER, 1872-71-70-69.

*Net Produce in YEARS and QUARTERS ended 31st DEC., 1872-71-70-69.*

[000's omitted.]

QUARTERS, ended 31st Dec.	1872.	1871.	1872.		Corresponding Quarters.	
			Less.	More.	1870.	1869.
Customs .....	£ 5,739,	£ 5,614,	—	125,	£ 5,403,	£ 5,740,
Excise .....	6,409,	5,804,	—	605,	5,598,	5,452,
Stamps .....	2,549,	2,438,	—	111,	2,213,	2,158,
Taxes .....	26,	36,	10,	—	22,	595,
Post Office .....	1,180,	1,158,	—	22,	1,200,	1,180,
Telegraph Service ....	260,	160,	—	100,	160,	—
	16,163,	15,210,	10,	963,	14,596,	15,125,
Property Tax .....	373,	539,	166,	—	338,	643,
	16,536,	15,749,	176,	963,	14,934,	15,768,
Crown Lands .....	120,	116,	—	4,	115,	113,
Miscellaneous.....	825,	989,	164,	—	880,	651,
<i>Totals</i> .....	17,481,	16,854,	340,	967,	15,929,	16,532,
			NET INCR. £627,265			

YEARS, ended 31st Dec.	1872.	1871.	1872.		Corresponding Years.	
			Less.	More.	1870.	1869.
Customs .....	£ 20,751,	£ 20,236,	—	515,	£ 20,205,	£ 22,073,
Excise .....	25,324,	23,238,	—	2,086,	22,437,	20,739,
Stamps .....	9,872,	9,644,	—	228,	9,020,	9,365,
Taxes .....	2,359,	2,338,	—	21,	2,971,	2,774,
Post Office .....	4,860,	4,690,	—	170,	4,650,	4,700,
Telegraph Service ....	905,	685,	—	220,	500,	—
	64,071,	60,831,	—	3,240,	59,783,	59,651,
Property Tax .....	9,636,	6,688,	—	2,948,	7,460,	7,531,
	73,707,	67,519,	—	6,188,	67,243,	67,182,
Crown Lands .....	375,	385,	10,	—	379,	363,
Miscellaneous.....	3,607,	4,305,	698,	—	3,647,	3,170,
<i>Totals</i> .....	77,689,	72,209,	708,	6,188,	71,269,	70,715,
			NET INCR. £5,479,809			

## REVENUE.—UNITED KINGDOM.—QUARTER ENDED 31ST DEC., 1872:—

*An Account showing the REVENUE and other RECEIPTS in the QUARTER ended 31st December, 1872; the ISSUES out of the same, and the Charges on the Consolidated Fund at that Date, and the Surplus or Deficiency of the Balance in the Exchequer on the 31st of December, 1872, in respect of such Charges.*

## Received:—

	£
Income received, as shown in Account I .....	17,481,362
Amount received in Repayment of Advances for Public Works, &c. ...	903,580
,, for Greenwich Hospital .....	30,340
	<hr/>
	£18,415,282
Excess of the Sums charged on the Consolidated Fund on the 31st of December, 1872, payable in March Quarter, 1873, above the Balance in the Exchequer at that date, viz.:—	
Excess of Charge in Great Britain.....	£3,665,755
Surplus overcharge in Ireland.....	1,306,065
	<hr/>
Net deficiency .....	*2,359,690
	<hr/>
Total .....	£20,774,972
	<hr/>

## Paid:—

	£
Net deficiency of the balance in the Exchequer to meet the charge } on the 30th of September, 1872, as per last account.....	132,085
Amount applied out of the Income to Supply Services .....	10,148,011
,, advanced for Greenwich Hospital .....	30,340
Charge of the Consolidated Fund on the 31st of December, 1872, viz.:—	
Interest of the Permanent Debt .....	£6,092,699
Terminable Annuities .....	2,252,764
Principal of Exchequer Bills .....	116,300
Interest of     ,,     .....	41,572
The Civil List .....	101,645
Other Charges on Consolidated Fund .....	308,626
Advances for Public Works, &c. .....	311,734
Sinking Fund (including 11,740 <i>l.</i> on account of } Telegraphs).....	1,239,196
	<hr/>
	10,464,536
	<hr/>
Total .....	20,774,972
	<hr/>

* Charge on 31st of December, 1872 (as above) .....	£10,464,536
Paid out of growing produce in December Quarter, 1872 .....	628,894
	<hr/>
Portion of the Charge payable in March Quarter, 1873 .....	9,835,642
To meet which there was in the Exchequer on the 31st of } December, 1872 .....	7,475,952
	<hr/>
Net deficiency as above .....	2,359,690
	<hr/>

**BRITISH CORN.—Gazette Average Prices (ENGLAND AND WALES),  
Fourth Quarter of 1872.**

[This Table is communicated by the Statistical and Corn Department, Board of Trade.]

Weeks ended on a Saturday, 1872.	Weekly Average. (Per Impl. Quarter.)					
	Wheat.		Barley.		Oats.	
	s.	d.	s.	d.	s.	d.
October 5 .....	58	10	40	1	22	4
,, 12 .....	58	9	41	9	23	2
,, 19 .....	58	8	42	11	23	3
,, 26 .....	57	11	43	10	23	-
<i>Average for October .....</i>	<i>58</i>	<i>6</i>	<i>42</i>	<i>1</i>	<i>22</i>	<i>11</i>
November 2 .....	57	4	44	1	23	6
,, 9 .....	56	9	43	3	22	4
,, 16 .....	56	8	41	11	23	3
,, 23 .....	56	9	42	1	22	1
,, 30 .....	57	-	42	4	22	11
<i>Average for November .....</i>	<i>56</i>	<i>10</i>	<i>42</i>	<i>8</i>	<i>22</i>	<i>9</i>
December 7 .....	57	-	42	6	22	10
,, 14 .....	56	6	42	3	22	9
,, 21 .....	56	3	41	2	23	2
,, 28 .....	56	4	40	4	22	7
<i>Average for December .....</i>	<i>56</i>	<i>6</i>	<i>41</i>	<i>6</i>	<i>22</i>	<i>10</i>
<i>Average for the quarter .....</i>	<i>57</i>	<i>3</i>	<i>42</i>	<i>2</i>	<i>22</i>	<i>10</i>
,, year .....	57	-	37	4	23	2

## BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the FOURTH QUARTER (October—December) of 1872.

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.		
£ Mlns.	1872.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1872. Per cent.
35,62	Oct. 2 ....	11,01	3,98	20,62	27,13	2 Oct. 5
34,73	" 9 ....	11,01	3,98	19,73	26,65	9 " 6
34,33	" 16 ....	11,01	3,98	19,33	26,44	
33,96	" 23 ....	11,01	3,98	18,96	26,01	
34,30	" 30 ....	11,01	3,98	19,30	25,95	
34,15	Nov. 6 ....	11,01	3,98	19,15	25,83	
33,98	" 13 ....	11,01	3,98	18,88	25,50	13 Nov. 7
35,22	" 20 ....	11,01	3,98	20,22	24,98	
37,00	" 27 ....	11,01	3,98	22,00	24,62	27 " 6
37,03	Dec. 4 ....	11,01	3,98	22,03	25,38	
37,45	" 11 ....	11,01	3,98	22,45	24,41	11 Dec. 5
38,09	" 18 ....	11,01	3,98	23,09	24,27	
38,09	" 25 ....	11,01	3,98	23,09	24,27	

## BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES.	Assets.			Totals of Liabilities and Assets.	
Capital.	Rest.	Deposits.	Public.	Private.	Seven Day and other Bills.		Securities.	Reserve.		
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.		1872.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,81	8,84	19,00	,45	Oct. 2	13,26	24,38	8,49	,43	46,67
14,55	3,11	5,63	20,70	,48	" 9	13,26	22,49	8,08	,65	44,48
14,55	3,14	5,51	19,47	,46	" 16	13,26	21,33	7,89	,66	43,14
14,55	3,16	6,09	19,46	,45	" 23	13,26	21,87	7,95	,65	43,72
14,55	3,17	6,72	18,87	,46	" 30	13,26	21,45	8,35	,71	43,77
14,55	3,16	7,04	17,94	,46	Nov. 6	13,26	20,86	8,32	,73	43,16
14,55	3,19	7,61	19,84	,46	" 13	13,26	23,15	8,48	,76	45,66
14,55	3,20	8,10	18,55	,40	" 20	13,26	20,60	10,24	,71	44,81
14,55	3,17	8,69	19,03	,38	" 27	13,26	19,50	12,38	,68	45,82
14,55	3,17	8,81	17,85	,41	Dec. 4	13,26	19,11	11,65	,76	44,79
14,55	3,18	9,30	18,15	,39	" 11	13,26	18,47	13,04	,79	45,57
14,55	3,19	10,24	17,44	,39	" 18	13,28	17,96	13,82	,76	45,82
14,55	3,19	10,24	17,44	,39	" 25	13,28	17,96	13,82	,76	45,82

## LONDON CLEARING; CIRCULATION, PRIVATE AND PROVINCIAL.

The London Clearing, and the Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday in each Week during the FOURTH QUARTER (October—December) of 1872; and in SCOTLAND and IRELAND, at the Three Dates, as under.

[0,000's omitted.]

ENGLAND AND WALES.					SCOTLAND.				IRELAND.		
DATES. Saturday.	London: Cleared in each Week ended Wednesday.*	Private Banks.	Joint Stock Banks. (Fixed Issues, 3,95).	TOTAL. (Fixed Issues, 2,74).	Weeks ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL (Fixed Issues, 6,85).
1872.		£	£	£	1872.	£	£	£	£	£	£
Oct. 5	124,09	2,93	2,50	5,43	Oct. 5	1,87	3,60	5,47	4,18	3,41	7,59
,, 12	111,62	2,89	2,51	5,40							
,, 19	125,77	2,88	2,52	5,40							
,, 26	108,84	2,83	2,48	5,31							
Nov. 2	117,16	2,78	2,45	5,22	Nov. 2	1,92	3,70	5,62	4,53	3,75	8,28
,, 9	107,27	2,78	2,45	5,22							
,, 16	93,78	2,74	2,43	5,18							
,, 23	128,50	2,72	2,40	5,13							
,, 30	86,41	2,68	2,37	5,05							
Dec. 7	131,41	2,64	2,34	4,98	Nov. 30	2,20	4,01	6,21	4,31	3,70	8,01
,, 14	91,64	2,62	2,33	4,95							
,, 21	126,63	2,62	2,34	4,97							
,, 28	82,52	2,65	2,35	5,00							

\* The Wednesdays preceding the Saturdays.

## FOREIGN EXCHANGES.—Quotations as under, LONDON on Paris, Hamburg and Calcutta;—and New York, Calcutta, Hong Kong and Sydney, on LONDON.

DATES.	1	2	3	4	Calcutta.		7	8	9
	London on Paris.	London on Hamburg.	New York.	India Council.	At Calcutta on London.	Hong Kong.	Sydney.	Standard Silver in bars in London.	
	3 m. d.	3 m. d.	60 d. s.	60 d. s.	6 m. d.	6 m. d.	30 d. s.	pr. oz.	
1872.				per. cent.	d.	d.	d.	per cent.	d.
Oct. 5 .....	26·	13·11 $\frac{1}{4}$		107 $\frac{1}{8}$	22 $\frac{7}{8}$	23 $\frac{3}{8}$	55 $\frac{1}{8}$	—	60 $\frac{1}{4}$
,, 19 .....	·2 $\frac{1}{2}$	,,		108 $\frac{1}{4}$	,, $\frac{1}{16}$	—	,, $\frac{5}{8}$	—	60
Nov. 2 .....	·2 $\frac{1}{2}$	,, $\frac{1}{2}$	,, $\frac{5}{8}$	,, $\frac{1}{8}$	,, $\frac{1}{16}$	,, $\frac{1}{2}$	54 $\frac{3}{4}$	1 pm.	59 $\frac{7}{8}$
,, 23 .....	·10	20·85	,, $\frac{1}{8}$	,, $\frac{1}{2}$	,, $\frac{1}{2}$	,, $\frac{3}{4}$	53	—	,, $\frac{1}{4}$
Dec. 7 .....	·5	·69	,, $\frac{1}{2}$	,, $\frac{5}{8}$	,, $\frac{5}{8}$	,, $\frac{3}{8}$	,, $\frac{1}{2}$	1 pm.	,, $\frac{3}{4}$
, 21 .....	25·97 $\frac{1}{2}$	·55	109 $\frac{1}{8}$	,, $\frac{5}{8}$	,, $\frac{5}{8}$	,, $\frac{1}{4}$	,, 1	1 pm.	,, $\frac{5}{8}$

## JOURNAL OF THE STATISTICAL SOCIETY,

JUNE, 1873.

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NOTES on the PURCHASE of the RAILWAYS by the STATE.

By R. BIDDULPH MARTIN, M.A.

[Read before the Statistical Society, March, 1873.]

IT cannot be said that a question like the one now under our consideration is devoid of public interest, on the contrary, it is so full of interest to each one of us, that it is more likely to rouse feelings of vehement argumentativeness than to be passed over with apathy and indifference. Many political theories of the highest real importance excite but little practical interest, because they touch on matters with which we have but at best a philanthropic concern. The confirmation or repeal of the Bank Charter would not put one extra five pound note into our pockets, and we dismiss a fearful story of the atrocities of Coolie immigration or of Hindoo superstition with a casual expression of sympathy. But let the railway by which we travel every morning raise its fares one penny, or let it leave us stranded in some drafty junction when we want to be at work or are missing an appointment whose importance we magnify minute by minute in the dismal waiting room, and immediately we write to the "Times," or say we will commit some similar absurdity. We are touched in a tender point, and we feel it, and the question for consideration now before us, is simply whether we have any real ground of complaint. If we have cause of complaint, can that be remedied by what may be called at least the fashionable movement of co-operation,—a vast co-operation it is true, but one of precisely the same nature as the "Stores," whose grocery sales excite the mingled envy and wrath of our shopkeepers.

The question is not of course quite so simple as this. The purchase of the railways involves far more intricate questions of policy than the purchase of groceries by a careful housewife, but the question is not of more importance to the aggregate of differently interested persons we call the nation, than the grocery question is to the individual. The chief consideration is the same. Will it pay, and will the trouble, annoyance, and difficulty involved in

carrying out our scheme be repaid by the convenience it affords to the proprietors, and the amount of money it sets free from their limited but never-sufficient incomes, to enable them to indulge in luxuries, to which they have hitherto been strangers, luxuries which, in the case of a State, are remission of taxation and the consequent impulse given to production?

In an article in the "Times," of 13th December last, on the subject we are about to consider, occurs this sentence:—"Easy and cheap conveyance has certainly become as great a necessity of life as a cheap press, and no impost is good which really checks its development." I think it might easily be shown that cheap locomotion is of even greater consequence than a cheap press, greater by the degree, that a free interchange of thought, by personal knowledge of our neighbours or distant countrymen, or the inspection of the visible glories of science or of art, are more healthy educators, more strengthening to the mind, and tend more to the development of clear views and to the sweeping away of locally received prejudices, than almost any amount of book reading or of study conveyed to us even in the ephemeral form of newspapers, magazines, or reviews.

But to discuss this, interesting though it be, is beyond our province. It will be sufficient to show here, that the purchase of railways by the State is simply one of expediency, and involves no question of principle.

The whole tendency of the last few years, a tendency whose signification should be by no means overlooked, is to look to Government for aid, or, in other words, to adopt the principles of co-operation. The possession of the Post Office by the State is looked upon as a matter of course, and excites neither comment nor disapproval, and yet this is solely due to the fact that the State has consulted the interests of the people rather than that of the administrators, and conducts the business on principles of small profits with a success that would render competition hopeless. I shall allude hereafter to the one exception to this of our times, which even the slightest pressure has swept away. Now I venture to say that, had the average postage of a letter been a shilling instead of a penny, and had railway and newspaper development gone on as they have since done, the outcry against the impolicy of Government monopolies would have been heard from one end of the country to the other. And yet the Post Office is but a carrier, differing only from the railway companies in the size of the parcels it conveys, and it would be impossible to say that the value of the property passing through the Post Office was more than that passing through the booking offices of the railways on any one day. Indeed, many persons would consider the value of their own bodies to exceed

that of very many registered letters, but on that subject they might possibly have an ignorant prejudice.

Again, and this is a matter that rests on precisely the same basis, the purchase of the telegraphs by Government passed without much serious complaint. Persons were much occupied in obtaining a large compensation, but the cry of confiscation was never heard. At first the newspapers were full of complaints of mismanagement, but when order was once established, the machinery has worked with careful precision, and many of the more remote country districts have received the boon of telegraphic connection from Government, whose small business would never have attracted the notice of companies working for their own profit.

On the other hand, it is useless to deny that the habit of relying on co-operation, either in the shape of limited partnership or of Government aid, is a most enervating and pernicious national habit. It destroys that individuality of thought and action, that venturesome enterprise which, content with moderate expectation, often attains a glorious success, a success which in every land has given to Englishmen and to English deeds a prestige and a renown of which in our day we talk rather than attempt to emulate.

It is, therefore, to the careful discrimination between the merits of private and public ventures in matters of general importance that we must look for the solution of the question—Ought the State to purchase the railways?

Neither must we be led away from the point by the specious arguments which point to Communism as the goal to which all this legislation would tend. If railways, some say, are to be State property, why not collieries? It is at least as important to England, that our coal should be looked after for the common benefit, as that locomotion should be made easy, and inland freight be cheap. If you have no coals you will have nothing to carry on your railways, and you may as well look to that before you embark in an expensive undertaking, and saddle the country with a debt you will have no means of liquidating. And if coals, why not land? At least the corn we grow for our daily bread is as useful to us as coals, or as railways, and should be grown for the State for the advantage of all! It will be no use regulating railways, telegraphs, or coal, if you have starved the population off the land, and are left to manage a useless and silent wilderness. To all these we may answer, your arguments are logically true; there is absolutely no reason why, if the State owns and manages the railways, it should not own and manage the cabs and omnibuses, the harbours and lines of steamers in connection with our colonies, the coal fields, the iron mines, and last of all the whole surface of agricultural land,—absolutely none,

But yet the world is not ruled by logic, or in England by ideas. We must take the times as we find them, and discuss one thing at a time. It is possible that in the lapse of long ages, the artificiality of civilisation will necessitate a state of communism, but with that we have no concern. We may be drifting onward into those innocent ages of universal bliss, which some dream of as the millenium, and some as communism ; but what is that to us ? If the Romans instead of making roads had wasted their time in dreaming of travelling sixty miles an hour, they would never have conquered the world, and he would be rash who said that the millenium is not further removed from to-day, than to-day is from the time of the Roman Empire.

It must always be remembered that the statesmen who were in power in the early days of railway enterprise made a great but not unnatural mistake as to the form that railway travelling would take. It was always believed that a railway would be exactly on the same footing as a highway or a canal. That is, that it would be simply a superior kind of road, on which private persons would run their own coaches and waggons, travelling at an easy pace, stopping where convenient, and only careful not to run into the coach ahead of him. (*Vide “Second Report of Commission, 1839.”*) The magnificent success of the first years of railway enterprise quickly got rid of this idea, but it is not too much to say that, had it been foreseen in what way monopoly would work, the Government of the day would have laid out a system of railways, and, by a regulation that would never have created jealousy, saved the country from the enormous waste of land and of money that afterwards took place. I mention this to show that regrets that the Government did not assume the control of the railways in the first instance, or in the days of their deep depression, are really of no value, as the enterprise would either have been developed in a wrong direction, or the State would have obtained a property with such a bad reputation that they would never have dared to spend the money on it that private hands have done, and it would consequently have languished till it had reverted to speculators, to the lasting damage and injury of Government credit.

If the State buys anything, it is bound to see that it buys no speculation, however apparently specious. It is no saving to a country to buy a “bargain.”

The history of railway competition in the form which it at once took, and in which it has ever since existed, is extremely curious and instructive. The companies began by pushing their trunk lines in different directions, of course through the most thickly populous and most prosperous districts, till they divided the country

into "territories," within which each possessed the practical monopoly, and the access to which was jealously guarded. This was not accomplished without much consolidation of local companies. The North-Eastern Railway, which now has almost a complete monopoly of its territory, consists of thirty-seven amalgamated lines, and has the lowest fares, and almost the highest dividend of any of the great system.

This fact is noteworthy, because the time when each railway had filled up its own district and had not begun to encroach on its neighbour, was the time of the greatest railway prosperity, as the following extract from one of Mr. Galt's tables will show.

On one share each in twenty-five railways 1,774*l.* had been paid—the selling price in the autumn of 1845 was 3,324*l.* Among these were :—

	Paid.	Price
		per Share.
<i>Great North of England</i> .....	100	217
<i>Grand Junction</i> .....	100	242
<i>Liverpool and Manchester</i> .....	100	217
<i>London and Birmingham</i> .....	100	222
<i>London and Croydon</i> .....	13	25
<i>Manchester and Leeds</i> .....	76	215
", <i>Birmingham</i> .....	40	90
<i>North Union</i> .....	100	225
<i>Stockton and Darlington</i> .....	100	275

The South-Eastern was the only one of the twenty-five principal lines whose shares were at a discount, the 50*l.* share being quoted at 45*l.*

The Stockton and Darlington paid ..... 15 per cent.  
,, Grand Junction paid ..... 11     ,,

many others from 10 to 7 per cent.

Then began the war between the established companies fighting for monopoly, and outsiders seeking to have a share of the profits by the starting of competing lines, and the pertinacity with which the occupying companies fought for their "territories" is a matter of history. To secure this they benefited the public, and ruined themselves, by making a series of branches, all this time throwing hindrances in the way of real development—that is, by competing in the amount of accommodation given—now hardly credible. For instance, by the Great Western Railway third class passengers travelled by open carriage to Bristol in nine and a-half hours; if the unfortunate passenger wished to go beyond, he was kept four or five hours before the train started. In 1844 a second class pas-

senger could not travel from London to Liverpool in the day. By third class he took two days, at a cost of 2*s.*

On the other hand, the subsequent competition for traffic produced equally curious results. The South-Eastern Railway carried on an opposition traffic to Reading at a cost of  $\frac{1}{4}d.$  per mile first-class, and are said to have lost nothing by so doing; and the cheap rates between London and Manchester during the struggle for that important traffic are well known.

It was soon found that competition as against the public ceased, and that if a new line was made in any territory it soon became, either by amalgamation or by a joint purse arrangement, closely united to the former lines, and working in an identical interest. It was at one time hoped that the canals would have proved formidable rivals to the railways for the carriage of bulky or heavy goods, but this was defeated by the railways obtaining possession of a portion or the whole of one canal, and fixing thereon tolls, fitly called "bar tolls," which effectually prevented its use by any traffic from neighbouring canals, except in its own direction. This case is clearly brought out in the evidence and report of the joint committee on railway amalgamation, and has been referred to by Mr. Chichester Fortescue in the House of Commons, when introducing his railway and canal regulations bill of this session.

It has in the above-named report been clearly shown that the only real competition with the railways is by sea, for instance, between London and Edinburgh, or between Liverpool and Glasgow; but even here it sometimes happens that a railway commands access to the port to such an extent as completely to regulate the traffic. In this way the North-Eastern have command of Hartlepool, and it has been pointed out by the above named committee, "that by an amalgamation between the North-Eastern, Great Northern Railway and Midland Railway, the united company might obtain possession of the Tyne, the Wear, and the Tees, "as the North-Eastern have of Hartlepool, and in that case they could and probably would discourage the carriage of coals by sea to London and other ports of England,"—a suggestion at this moment sufficiently alarming.

But that which, applied to our own case, is so very evident, is none the less important on a smaller scale. The rates for carriage of goods from Manchester to Fleetwood is stated (Select Committee, 1872) to be scarcely higher than the rates from Manchester to Preston, though Preston is twenty miles farther from Manchester, and coals carried from Wigan to Widnes for exportation by sea are carried for 1*s.* 2*d.* per ton, but if for consumption in Widnes the same coals are charged 2*s.* 4*d.* per ton. The same evidence points out that the charcoal wood trade of some parts of South Wales is

entirely destroyed by the combination of several companies to force the traffic through their lines, at a cost that leaves no margin for profit on its arrival in Lancashire, where it is used for the manufacture of gunpowder or vinegar.

If, therefore, we fancy that the “struggle for life” is as strong in railway companies as in those other soulless organisations whose developments have been studied with so much interest, and look to the natural antipathy of two or more competing lines to give us an excellent service of trains, moderate tariffs, and reasonable devotion to our weaknesses or comforts, we are trusting to a slender reed; the end is always the same—amalgamation. The lion lies down with the lamb, and both fleece the confiding public.

Lord Derby pertinently asks, in the evidence added to the report of the before-mentioned committee: “Then competition will die a ‘natural death?’”—to which Captain Tyler replies:—“Competition, ‘I think, in the end must die a natural death.’”

If, then, competition has failed to protect the interests of the public, and the victory of the railways over the public is admitted to be complete, it will be as well to pay some attention to the manner in which the companies have exercised their powers as to safety.

The remarkable series of reports on accidents published year by year on the authority of the Board of Trade, give conclusive proof that for many years safety was made quite subservient to profit. They show that the railways, armed with powers conferred upon them by their Acts of Parliament, successfully defied any interference in their working by the Board of Trade, to whom alone the public looked for protection.

That this antagonism has not yet died out, the correspondence between Sir Edward Watkin and Mr. Chichester Fortescue is a glaring proof.

It would scarcely be fair to go back to the very first years of railways. Then the machinery was new, and a certain amount of accident was the result. But let us take the last twelve years only, and see what has been said concerning accidents we shall all remember.

In 1861 there was an accident on the Hampstead line; Colonel Yolland reports that—“The telegraphic system of signalling should ‘be extended, that a more experienced signalman should be employed, the safety of the public should not be entrusted to a ‘boy of nineteen, paid at the rate of 14s. or 15s. a-week.’” He also complains of the improper construction of sidings, and of the insufficiency of the brake power. Captain Rich, reporting on an accident on the Lancashire and Yorkshire Railway, says, that the

cause of the accident was owing to no signal being displayed, and that regulations that require “express trains, travelling at great speed, not to be stopped when following other than slow trains, ‘require alteration.’” He complains also of want of station semaphores.

Captain Tyler reports on another accident on the same line, that it was caused by insufficient and inefficient signals.

Colonel Yolland says that the Blackwall Railway requires self-acting distance signals.

Captain Tyler, writing of the notorious Clayton Hill Tunnel accident, in a long and exhaustive report says, that inefficiency of working was the principal cause of the accident. In consequence of this, a circular, embodying the recommendations of the report, was sent to all the railway boards, recommending the adoption of the telegraphic system. The Brighton board doubt the efficacy of this advice, as taking responsibility from drivers.

Captain Tyler, again, writing of an accident near Leamington, caused by the giving way of a girder, says, “That they should ‘have been allowed to remain, and that this girder should have ‘been so patched, and retained till failure took place, is too ‘much in accordance with ordinary railway practice, which does ‘not take sufficient account of increased or increasing weight of ‘engines.’”

In 1862, Captain Tyler reports of an accident on the Caledonian Railway, that it was caused by the brake carriage travelling wrong end foremost, and that there was no main signal at Gareloch station, a deficiency that still exists at other stations on the Caledonian Railway.

Colonel Yolland, again of the same, the Caledonian Company, says, fatal results would in all probability not have ensued if the train had been provided with a larger amount of brake power; adding, “I also urge the necessity of a hoarse, loud brake whistle on ‘every engine, to avoid accidents, there should never be a moment’s ‘uncertainty as to the fact of the brake being required.”

Captain Rich writes of the Dublin and Meath Railway. “These ‘regulations, one contradicting the other, are calculated to confuse ‘the gatekeepers.” In this case a printed notice was issued. This was corrected and altered by written marginal notes, and the whole was varied by a written notice posted up in another part of the line, confusing, certainly;—but then this was in Ireland.

Captain Tyler, of an accident on the Edinburgh and Glasgow Railway, when working on a single line, says, it was caused by working on a lax system, and under vague instructions. Captain Tyler, again of the Great Western Railway, says, an accident was caused by the want of distance signals, making even a station an

indifferent refuge, and points out the danger of allowing engines to run too long without examination.

Colonel Yolland says, the Brighton Railway "is so cramped for "room at London Bridge, that there is not sufficient space for proper "points," and, when reporting on the death of a passenger killed in releasing a lady's dress that had been shut into the door, doubts if that line had ever been inspected, so dangerously near to an arch did it place the carriages.

Again, of the London Chatham and Dover Railway, the permanent way is not sufficient for the heavy traffic, and of an accident near Stretton, on the London and North-Western Railway, "The whole arrangements for the protection of trains and of the "travelling public is *very* insufficient." Captain Tyler writes of a "system of working on the Midland Railway, in which chance and "luck are too intimately connected."

In 1865, Captain Tyler says, that no brake-van was attached to an empty coal train on the Blyth and Tyne line, and reports that the guard was often expected to ride on the coals, or the buffer of the last truck, which is an unsatisfactory mode of working.

Colonel Yolland writes, in the same year, of the very irregular way of providing for the public safety afforded by the Edinburgh and Glasgow Company. Colonel Yolland recommends all stations to have sidings sufficiently long for the longest goods trains, and writes of the Great Western Railway, "If the directors cannot "incur the expense of altering the Reading station, the safety of the "public absolutely demands that their lives should not be jeopardised "by the mere mistakes of a pointsman, when 100*l.* would set the "matter right."

A long and monotonous series of complaints runs through the official reports of accidents of these years. Want of signals, want of platforms, overloading of engines, want of brake power.

The adoption of the block system is persistently urged year after year. In 1867, the Board of Trade deeply regret that the London and North-Western Railway did not carry out a previous recommendation of Captain Tyler's, by which a lamentable loss of life would have been prevented (Walton accident), till at last Colonel Yolland mournfully suggests the utter uselessness of these Board of Trade inquiries. Right as the inspectors may be in pointing out the cause of disasters, no notice is taken, and a calamity, accident it cannot be called, occurs again.

It often happens that important points and short sections of lines at junctions are a kind of no-man's land when they have been once built. They possibly are on the land of one company and are used by another company under running powers. Neither will keep them in order, and as the result of the existence of separate

interests, an accident occurs, the likelihood of which a general supervision by superior authority would have certainly pointed out and prevented. But, under present circumstances, the Board of Trade have no control over a railway after it is once open for traffic, however much the subsequent construction of junctions or of the requirements for additional accommodation may affect the public safety.

That these and many other real causes of complaint exist, is admitted by the highest authorities, both of the railway and mercantile world. The remedies proposed are various. Mr. J. Yeaman, the Provost of Dundee, gives evidence that the amalgamation of the various railway companies forming the Caledonian system has had the effect of raising the price of the conveyance of coal between Arbroath and Forfar from 2s. 6d. to 3s. 6d. per ton, or 40 per cent.; and of goods, from 5s. 6d. to 6s. 8d.—8s. 6d., or from 20 to 53 per cent.

Grain from Aberdeen to Glasgow, where there is sea competition, is carried for 12s. 6d. a-ton, but from Forfar, a distance 57 miles shorter, the charge is 14s. 2d. a-ton. Mr. Yeaman gives a large amount of similar evidence, and states that when the North British and the Caledonian were working on the joint purse system, the tariff for goods to Liverpool was absolutely, in his own case, prohibitory. Mr. F. Broughton, manager of the Mid Wales Railway, states, that though the line from the Dowlais coal pits to Birkenhead is eighteen miles shorter than by the Great Western Railway, they are unable to carry coal with certainty, owing to the vexatious delays of the Cambrian and Great Western Railways; and, in a mass of evidence, clearly shows the complete hold which the large lines have over the smaller ones, and their power, by prohibitory rates, to force the traffic into their own lines, a power they naturally exercise to the extent in some cases, as of the wood for making charcoal for gunpowder, of entirely suppressing the trade, as before mentioned. Mr. Price, M.P., chairman of the Midland Railway, thinks that the amalgamation of railways is almost a necessity for the convenience of the public. He thinks, and this is important as coming from so high a railway authority, that the whole of England ought to be divided into some six or seven railway districts, but that the public ought not to trust to competition alone for their protection; and if the country was so mapped out, "you would require a measure of State control which has not been called for yet." Mr. Price incidentally mentions that scandal of the railway world, that trains of companies having running powers over other lines, and stopping at stations, are not able to take passengers from one local station to another.

We may take it for granted, and I think that the evidence I

have selected from a vast mass of similar kind, is sufficient to show that some remedy must be adopted. Mr. Chichester Fortescue has recently proposed to meet the case by establishing an efficient control, for it is quite clear that, if the court he proposed be established, with the excessive and arbitrary powers it would require, it will practically be a board of control similar to that famous board which only existed as the precursor of imperial power.

For instance, in a case that occurred within my own knowledge, the South-Eastern Railway claim, by virtue of their special Acts, a right to charge on every ounce of passenger's luggage not being wearing apparel. (In this case the dispute was on account of a charge made on a box accompanying a passenger, and containing the results of a lady's morning shopping, part of which was grocery.) If the proposed court is simply a court of law it will be obliged to admit the company's right, but, if it be constituted a court of administration, it would probably cancel so much of the Company's Acts as were necessary to put them on the same footing as the general law ruling other lines; and some trumpery dispute about a pound of tea or a box of soap might at any moment involve the court, on a question of authority, in a struggle for existence with all the great railway interest within and without the House of Commons arrayed against it. The issue would not be for one moment doubtful. A small, still more a large, compact body of men, working together for a common end, will always defeat the loose efforts of an undisciplined force, whether in war or in politics, and the board, gaining only the general support of the public, would be easily overcome. Unless, therefore, the proposed board is so powerful that it can absolutely rule the tariffs, and effectually supervise the permanent way and rolling stock of the railways—in a word, unless their power is absolute, and their decisions admitting of no appeal, certainly not of one to the House of Commons—their existence cannot be secured for a day, when once the interest of the public and that of the railways are in collision. The court would be simply a section of the Board of Trade, whose railway department, as already established, should have had long ago every power and facility for supervision proposed to be given to this new court.

If, then, as we have seen, we cannot trust to competition among the railways to give to the public those facilities of locomotion, either for persons or for goods, which have ceased to be luxuries and are necessary to the prosperity of a country requiring day by day increased facilities for the economical management of a population day by day equally increasing; and if on all hands it is admitted that the public must interfere by legislation with the rights of property, whose working is so valuable to them as to be no longer private enterprise; and if, finally, it can be shown that legislative

interference to be of any use must be arbitrary and inquisitorial, it follows that the only course left for the nation to pursue is to make legislative interference real, by being the managers of the railways themselves—that is, that the State should purchase the railways.

I have not alluded to the possible alternative of the State purchasing the railways and leasing them out to be worked by private hands, inasmuch as that is an ingeniously-contrived mixture of the disadvantages of both systems, without a single redeeming advantage; and, in fact, only to be entertained by a country making a new railway system.

I will, therefore, now consider how the State might best proceed to purchase or acquire the railways.

In the first place, I must emphatically point out that the State should never work an industrial or trading company, or any business of which it has the monopoly, for profit. If it does so it at once enters into most unjustifiable competition with legitimate trade—it injures the private trader, stops enterprise, and really imposes the taxation with one hand that it supposes it takes off with the other.

Thus it was distinctly unfair and impolitic that the Post Office should, relying on its monopoly, charge 1*d.* for every circular sent through its hands when a private company was ready and willing to distribute letters in a neighbourhood for much less; and again, inasmuch as before the Government acquired the telegraphs a message could be sent from one part of London to another for 6*d.*, it was distinctly a grievance that this charge should be doubled. We forgave the Post Office when the  $\frac{1}{2}$ *d.* rate was introduced. We are waiting to forgive the telegraphs till the 6*d.* charge is the uniform tariff.

It is the duty of the Government, after paying interest on the money found by the country for the purchase, to set by a certain sum for redemption of the debt, and then to reduce fares and freights to the lowest paying point. Of course, any surplus remaining would be available for reduction of the national debt. For instance, if Government bought the railways for 600 millions, it would devote  $3\frac{1}{2}$  per cent.—*i.e.*, 21 millions—to the payment of interest, 1 per cent., or 6 millions, to a redemption fund; and, if there were any surplus beyond this, it would be devoted to lowering fares and freights.

It would be necessary, in the first place, to establish a stock, to be called Railway 3 per Cent. Stock, to be repaid by Government at par on sufficient notice. The stock would be either inscribed or in shape of bonds to bearer, and be issued in series, each series consisting of, say, 3 millions of stock—not less than one series to be redeemed at once, the series to be redeemed to be determined by lot in the ordinary manner.

If such a stock were issued at 90 per cent. it would probably be found to be far more popular and convenient than terminable annuities; as, with proper arrangements, trustees might hold such stock without the inconvenience of forming a sinking fund; and it would have that small element of speculation so dear to the bet-loving Englishman.

Perpetual annuities without a scheme of redemption appear to me to be a pledge of the property of unborn generations not justifiable in any case. The allotment of an equivalent of this stock at 90 to the value of the railway stock at the price of the day would probably be a fair price, and one that would tempt the majority of holders of railway stock to change their holdings without question; and the advantage of issuing such stock in series would be that the companies might be bought up gradually should it be found impossible to carry through the whole transaction at once.

The question of purchase must be strictly considered under three heads, viz.—

1. That of debentures or debenture stock.
2. Preference stock.
3. Ordinary stock or shares.

The tables are all taken from the returns of 1871.

1. Debenture stocks or debentures.—These stand roughly somewhat according to the following table:—

	Per cent.	Stocks.	Annual Interest.
		£	£
England and Wales—			
Unclassed .....	—	2,000,000	980,000
	6	2,000,000	120,000
Bearing interest at .....	5½	50,000	4,750
	5	22,000,000	1,200,000
	4¾	1,000,000	47,500
	4½	33,000,000	1,485,000
	4¼	18,000,000	775,000
	4	47,000,000	1,880,000
	3¾	500,000	18,700
	3½	250,000	7,800
		126,000,000	5,618,750
Scotland, ditto .....	6	12,000	720
	5	1,150,000	57,500
	4¾	100,000	4,750
	4½	1,900,000	85,500
	4¼	2,100,000	8,900
	4	11,600,000	464,000
	3¾	150,000	5,000
	3½	215,000	7,500
	3	73,000	2,200
		17,390,000	636,070

That is to say, that the railways (omitting Ireland) are mortgaged to the extent of 153 millions, at an annual rental of  $6\frac{1}{4}$  millions, viz., in—

	£	£	
England .....	126,000,000	5,618,000	
Scotland .....	17,000,000	636,000	
	<b>143,000,000</b>	<b>6,254,000</b>	

or at an average rate of somewhat over  $4\frac{1}{4}$  per cent.

Now, since the greater part of this is as securely invested as it is possible to be, it would be very impolitic, if not impossible, to decrease the interest by more than a small fraction, say to 4 per cent.; so that the first thing to provide is an amount of railway debenture stock paying an annual sum of interest amounting to about 6,000,000*l.*, or about 150,000,000*l.* stock.

As the net receipts for the English, Welsh, and Scotch railways amount to about  $24\frac{1}{2}$  millions, this would be a first charge on this amount, reducing the available total to 18 millions.

This part of the transaction would be comparatively easy. It would be much more difficult to settle the claims of the preferential stock holders.

2. Taking the total preferential and guaranteed capital at 166 millions, it would be necessary to provide an average amount of certainly,  $4\frac{3}{4}$  or 5 per cent. to this, but the preferential claims and stocks are so intricate and so mixed up with the history of railway amalgamation, that it would be impossible within the limits of this paper, were I capable of the task, to adjudicate a fair equivalent in Government stock.

With the exception of the Metropolitan, London Chatham and Dover, and a few minor lines, the preferential dividends are on the chief lines almost as secure as debentures; they could not, therefore, be bought up much under 5 per cent. in Government stock. Certainly 8 millions of income must be devoted to this purpose.

3. We should, therefore, have left somewhat about 10 millions to pay interest on 213 millions of ordinary stock.

Taking the cost of this to the State at about 240 millions, and giving a return of an average of 4 per cent., this would still leave a small margin of profit to the State. It is, however, only possible to give an estimate, and though these calculations are based upon existing figures, without any allowance for profit of working or economy of management, yet they are sufficient to point out that the State could not make a large profit out of the transaction

without damage to the rights of the existing shareholders. It is to the economy of single management that we must look for such a surplus as will provide for a great diminution of fares, and the gradual extinction of the debt incurred for the purchase.

The conversion would be, even for these days, a gigantic operation; but it is not for Englishmen to say that, in the zenith of her prosperity, England cannot afford to spend 600,000,000*l.* for property worth every farthing of the money; when, at the close of a disastrous war and prostrated in utter financial exhaustion, France can pay a fine of the third of that amount, and survive.

It has been suggested by many, that the patronage that the Government of the day would possess, if they had the railways in their own hands, would be so great as to be a serious political consideration. This must cause alarm, either from the fear of the political influence to be exercised by an employer over his workmen, or of the nepotism to be exercised by putting worthless men into situations for which they are unfit. From the first of these the ballot is a more than sufficient protection, the fear of the latter danger is imaginary. In the first place, the magnitude of the service would make it altogether a special one, in which no one would be admitted who had not served a regular apprenticeship, as in the Army or Navy, beginning with the lowest grade at an early age, and gradually working upward.

The Civil Service is not usually considered to be so lucrative as to be very attractive to indigent men, and if the question of social status were ignored, the traditions of the railways would expect such hard work as to hold out no inducement to men unfit for the post to covet the position of traffic managers or station masters.

On the whole, then, it may be assumed that there is no political danger to be apprehended from this source.

The important consideration now remains:—What advantage would be derived from this stupendous change? Will the result be worth the trouble, the annoyance, and the expense involved?

The first and great advantage, would be the adoption of a system analogous to that of the Post Office; one payment, either for passengers or goods, would carry to any other station in the kingdom, whether on the same line or not. A system of stamps for parcels or goods of the lighter classes would probably be a still greater simplification. With passengers this is a question of very minor importance, but with parcels and goods it would give great stimulus to trade. The difficulty of obtaining goods direct from the manufacturer, or of supplying the demands of trade from the most advantageous sources, is often very great, owing to the rivalries of companies consulting their own interests.

The difficulties that beset the Peninsular and Oriental Company in obtaining a direct and remunerative conveyance for their silk and other eastern produce they import to the manufacturing districts (see Mr. A. Scott's evidence, p. 523, 1) were at one time so great, as to lead to a discussion as to whether the depôts of the company should not be moved from Southampton to Liverpool.

We might then expect to have a tariff for all classes of goods, and tables of rates so clearly laid down, that new mercantile transactions, with a very narrow margin of profit, might be entered into with confidence. Old established rates are of course perfectly well known to those interested, the difficulty is with new industries.

Among the minor advantages to be obtained, may be noticed the adoption of tickets available for a certain distance on any line, a regular conveyance, and delivery of small parcels. The perfect utilisation of the railways for carrying mails, by the use of every station as a subsidiary post office, from which letters might be dispatched with greater frequency, or if every train were to carry on it a post office, letters too late for the ordinary round of the postman might be sent on to the nearest large town, often saving much delay, without any increase of post office machinery.

In process of time, branches and subsidiary lines would be made into districts that have now no accommodation. In fact, extensions would be made on the same principle by which the telegraphs are now being extended into remote villages, developing a traffic for themselves. That the railways would do this, on a still greater scale, can scarcely be a matter of doubt. In a military point of view, it would add greatly to the internal safety of the country if the whole of the railways were in the hands of a central power; in a moment of danger, the harmonious working that might be carefully planned in times of peace, would possibly save the country; and the moving of large bodies of men, with their material and stores, might be reduced to a certainty, by constant practice, on the State's own railways.

The semi-military training that the State would require from the army of about 240,000 men taken into its service could be turned to the most useful account, and is a source of home defence that should be by no means overlooked.

There is one great advantage, the consideration of which I have reserved to the last, as being on every ground the most important, and that is the reduction of freights and fares that might be made by the State working the railways at little more than cost price.

Roughly speaking, the cost of working a railway is something under 50 per cent. of the gross earnings.

The following is a table of the proportions on the chief lines, i.e., lines of more than 100 miles in length:—

[000's omitted.]

Railways in 1871.	Miles Open.	Total Receipts.	Total Expenditure.	Percentage.
		£	£	
Bristol and Exeter.....	153	449,	241,	46
Cambrian .....	178	174,	108,	62
Great Eastern .....	822	2,383,	1,153,	48
,, Northern .....	544	2,379,	1,158,	48
,, Western .....	1,387	4,601,	2,098,	45
Lancashire and Yorkshire.....	428	2,913,	1,351,	46
London and North-Western.....	1,472	7,593,	3,453,	45
,, and South-Western.....	669	1,961,	982,	51
,, Brighton and South Coast ..	345	1,384,	665,	48
,, Chatham and Dover .....	147	749,	408,	54
Manchester, Sheffield, and Lincolnshire .....	258	1,318,	635,	48
Midland .....	899	4,602,	2,066,	45
North-Eastern .....	1,814	5,033,	2,249,	45
,, Staffordshire .....	180	540,	247,	45
South Devon .....	112	262,	110,	42
,, Eastern .....	327	1,518,	676,	45
Total, England and Wales....	10,850	41,383,	19,387,	47
Caledonian .....	785	2,280,	1,094,	48
North British.....	821	1,684,	902,	53
Glasgow and South-Western .....	288	747,	345,	46
Great Northern of Scotland .....	286	220,	103,	47
Highland .....	335	266,	114,	43
Total, Scotland .....	2,538	5,237,	2,653,	47
Belfast and Northern Counties .....	151	165,	81,	49
Dublin, Wicklow, and Wexford .....	107	200,	86,	43
Great Southern and Western .....	445	618,	308,	50
Irish North-Western.....	195	151,	98,	65
Midland Great Western .....	375	403,	219,	54
Ulster .....	140	180,	84,	46
Waterford and Limerick .....	151	130,	79,	60
Total, Ireland.....	1,988	2,272,	1,181,	52

The proportion of these principal lines, except the Cambrian, London Chatham and Dover Railway, North British, Irish North Western, and Waterford and Limerick, is contained within narrow limits. On some of the small lines a similar table gives more startling results—

*Lines whose Working Expenses exceed 80 per Cent. of Gross Earnings.*

Railways.	Miles Open.	Total Receipts.	Total Expenditure.	Percentage.
		£	£	
Anglesey Central .....	18	7,400	6,300	85
Bishops Castle .....	10	3,000	2,900	98
Bodmin and Wadebridge .....	15	2,312	2,584	112
Carmarthen and Cardigan .....	19	16,500	13,800	83
Cheshire Lines Committee .....	57	116,000	120,000	104
Colne Valley .....	19	8,000	7,800	97
Dowlais .....	2	1,750	2,700	292
East and West Junction .....	7	1,050	1,850	233
Garstang and Midland .....	7	1,400	1,400	101
Lostwithiel and Fowy .....	5	895	756	84
Macclesfield Committee .....	11	7,246	8,173	113
Methley Joint ,,, .....	6	2,794	2,410	86
Mowddwy .....	7	1,215	1,086	90
Neath and Brecon .....	33	11,600	10,400	90
Newport Pagnell .....	4	3,871	4,477	116
Northampton and Banbury Joint } Committee .....	12	3,107	3,485	112
Northumberland Central .....	13	2,853	2,860	100
Oldham, Ashton-under-Lyne, &c. .....	6	14,800	13,700	92
Potteries, Shrewsbury, &c. .....	25	8,500	8,000	94
Redruth and Chasewater .....	10	3,900	3,600	92
Talyllyn .....	7	1,645	1,810	110
Thetford and Walton .....	9	2,000	1,700	84
<i>Ireland—</i>				
Athenry and Ennis Junction .....	36	8,487	7,553	89

*Note.*—No line in Scotland is worked at a higher cost than (City of Glasgow line) 71 per cent. of gross earnings.

From the above table it will be seen that many of the smaller lines are worked not only at a very high percentage but at a positive loss; but it may be conceded that the cost of working would be much diminished did they belong to a company rich enough both in money and rolling stock to carry on the traffic as occasion required, and to give foreign employment to a staff or to rolling stock when not wanted on the line itself.

It may, therefore, be concluded that the cost of working the railways of the United Kingdom as one system would not exceed the present average percentage of 47 for England and Wales, 49 for Scotland, 52 for Ireland, or 47 for the United Kingdom.

The total capital embarked in the railways in 1871 was—

	Ordinary Stock and Share and Preferential.	Debentures, &c.	
		Mlns.	Mlns.
England .....	335	126	
Scotland .....	47	17	
Ireland .....	21	6	
Total .....	403	149	
	149	—	
	552	—	

The gross receipts are—

		Working Expenditure.
	£	£
England .....	41,383,000	19,387,000
Scotland .....	5,237,000	2,583,000
Ireland .....	2,272,000	1,181,000
Total .....	48,892,000	23,152,000

leaving a net receipt of 25,739,920*l.*, after paying all working expenses.

It is needless to say that, could the 552 millions be represented by a 3 per cent. stock at 90, or 613 millions of stock involving an annual charge of 18,390,000*l.* for interest, the annual surplus revenue would be nearly 7½ millions; and, after applying even 1 per cent., or 7 millions, as a sinking fund, there would still be a large surplus for reduction of fares.

Unfortunately this is not the case, and the only lesson to be learned from these tables is that one above-mentioned, that large lines can be worked at rather less than 50 per cent. of their whole receipts, but that in small branch lines the working expenses often swallow up the whole of their earnings.

Mr. Galt, in his work on "Railway Reform," published in 1864, gives the following analysis of the "cost of conveying a train per 'mile'"—

	s.	d.
Maintenance of way and works .....	—	5½
Locomotive power .....	—	9
Repairs and renewals of carriages, &c. ....	—	2½
General traffic charges .....	—	9
Rates and taxes .....	—	1¼
Government duty .....	—	1
Compensation for removal, injury and damage, or loss of } goods .....	—	½
Legal and parliamentary expenses .....	—	½
Miscellaneous .....	—	2
	2	7
	0	2

To this will probably have to be added 30 per cent. for increased cost, raising the average cost of conveying a train of any kind one mile to 3s. 5d. If, with Mr. Galt, we take the average number of passengers conveyed in a train at fifty, the average cost per mile of a passenger will be about 0·8d. per mile. Mr. Galt goes on into estimates which, in presence of the late enormous and uncertain increase in the price of coals and labour, it is impossible rightly to check, but it will readily be conceded, with him, that if “the State “should become the possessor of the railways, and adopt a very “low tariff . . . there would be an enormous increase in the “number of passengers, and I think we might safely estimate that “the ordinary existing traffic would be *trebled*;” and since there would be no double set of trains running on alternative lines, would enable the number of trains to be absolutely diminished and yet the train accommodation to be increased, and, with the great economy of rolling stock that would be effected by employing the waggons and coaches whenever they were wanted, and not with regard to any particular lines of railway.

In fact, we may accept Mr. Galt’s conclusion as legitimate, and, in spite of the increased cost of labour and material, make the rates to be aimed at something as follows:—

<i>For Express Trains—</i>	<i>d.</i>
First class.....	1 $\frac{1}{4}$ per mile.
Second „ .....	— $\frac{3}{4}$ „
Third „ .....	— $\frac{1}{2}$ „

<i>For Slow Trains—</i>	
First class .....	$\frac{3}{4}$ per mile.
Second „ .....	$\frac{1}{2}$ „
Third „ .....	$\frac{1}{4}$ „

with a proportionate reduction in the price of annual and season tickets, and of all freights and charges.

The impetus that such a reduction of fares would give to travelling and to trade can hardly be imagined; it would only be less than the increase of industry that followed the introduction of the 1*d.* postage.

It will be at once said, in objection, that the dividends at present paid by the railway companies is so small and so hardly earned that any reduction of price would sweep away profits; as, for instance, that the Midland Railway, with an increase of 250,000*l.* sterling of gross receipts, have been obliged to increase their coal and goods rates to avoid a serious diminution of dividend; but the cases would prove altogether dissimilar, though it would be useless to introduce figures here, which could only be usefully done by a careful analysis of the accounts of the whole of the railways

of the kingdom, showing which lines and trains could be used and which could be dispensed with. It would require the labour of a commission of traffic managers to regulate the workings of railways on a joint system to the best advantage; and till this is done it would be impossible to estimate the saving that could be effected.

For instance, we must know how many passengers could be taken by a direct route to Liverpool, Manchester, Leeds, or Glasgow, and how many of the trains that different companies start at the same hour for the same destination could be altogether dispensed with. We must then know the exact cost of each train mile run, and the minimum number of passengers or tons of goods to be depended on. With these statistics, the minimum paying fare might be easily calculated, a suitable rate established, and the natural development of industry caused by decreased fares left to do the rest.

I may point out that the proposed diminution of fares would not only be felt by traders directly, and so indirectly by us all, but would be felt by every family and household through the kingdom. It would be felt as a diminution of direct taxation, it would make a sensible difference in the amount of our weekly expenditure, and so release large sums of money to be spent in luxuries or conveniences to which we now remain strangers, the carriage and distribution of which would swell the railway receipts; an enormous load would be taken from our shoulders, and we should once again recognise the only practical roads we possess, to be a "Queen's Highway."

The interest that this question excites in the country, the volumes of complaint that the newspapers publish against the railroads during the whole time of year that they have space in their columns to do so, the articles the newspapers from time to time insert against the present system of management, and, finally, the evidence given before the joint select committee on railway amalgamation, induces me to believe that a discussion of this subject before the Statistical Society is not inopportune; and, though I am well aware of the very slender material of which this paper is composed, and of the very old arguments that it contains, yet I believe that the material is strong though slender, and the arguments are the better for their age; and I look forward with confidence to the day when this discussion shall be looked back upon as one as obsolete as those that preceded postal reform, and when the emancipation of the trade of the country from the greatest monopoly that ever stifled its legitimate development shall be a thing of the past.

I will conclude with a few remarks on the Irish railways, which, as an independent system, it has been proposed, for political purposes, to purchase.

In the first place, it must be remembered that in Ireland the traditions of successful enterprise are not so strong as in England, and the State would enter into possession of a neglected property; but that great advantage would follow I have no doubt. In Ireland there are 1,988 miles of railway constructed by forty-three companies, an average of less than 47 miles each; of these six are leased to, and fifteen are worked by, other companies, leaving twenty-two real companies. They pay no Government duty, yet the expenditure is 52 per cent. of the gross receipts. They have an authorised capital of 31,461,317*l.*, of which is paid up and received—

	£
Stock and share capital .....	20,683,095
Debenture stock and loan .....	6,345,485

The debenture stock stands (1871) as follows—

Borrowed at									
3 per Cent.	3½.	4.	4½.	4¾.	5.	5½.	6.		
£	£	£	£	£	£	£	£	£	£
14,500	667,719	1,326,276	987,473	1,412,126	97,609	1,547,767	73,871	111,836	

involving an annual fixed charge for interest of—

	£
3 per cent. ....	435
3½ „ „ „	23,350
4 „ „ „	53,100
4¼ „ „ „	43,000
4½ „ „ „	63,500
4¾ „ „ „	4,600
5 „ „ „	77,500
5½ „ „ „	4,000
6 „ „ „	6,700
	<hr/>
	276,185

secured on a net receipt of 1,090,795*l.*

Of preferential capital the companies have raised at—

	Per Cent.	On which is an Annual Charge of	
		£	£
6 .....		364,000	21,840
5½ .....		83,600	4,590
5 .....		2,628,400	131,420
4½ .....		463,900	20,875
4¼ .....		11,000	479
4 .....		325,700	13,028
			<hr/>
			192,232
Interest not paid, or only partly paid, say, at 5 per cent.		572,000	—

therefore the fixed charges amount to—

	£
On debenture stocks.....	276,000
„ preference „ .....	<u>192,000</u>
	468,000
Leaving a balance of .....	<u>622,000</u>
Total net receipts .....	1,090,000

paid up to provide interest on the ordinary capital of 14,630,000*l.* or very nearly  $4\frac{1}{4}$  per cent.

The following table shows the rate of interest paid on their ordinary stock by the chief Irish railways—

	£	Per cent.
Belfast and County Down .....	236,000	$11\frac{1}{4}$
Dublin and Kingston .....	350,000	$9\frac{1}{4}$
Belfast Northern Counties .....	557,000	$6\frac{1}{2}$
Ulster .....	1,000,000	6
Dublin and Drogheda .....	692,000	$5\frac{5}{8}$
Great Southern and Western .....	4,280,000	$5\frac{1}{4}$
Midland Great Western .....	2,157,000	$4\frac{1}{8}$

Of the minor railways, twelve pay dividends on a capital of 2,900,000*l.*, at rates varying from  $4\frac{3}{4}$  to  $1\frac{1}{2}$  per cent., and thirty pay no dividend at all on a capital of 2,390,000*l.*

Looking at these figures, it would appear that if the Government were to purchase these lines as they at present exist, they must provide out of savings a sum of not more than 100,000*l.* a-year to pay the same interest as at present to all who receive any interest, and to pay 4 per cent. on the money they would have to spend on lines at present paying no interest, taking their approximate value at 50 per cent. of the paid-up capital. It would be very strange if this sum could not be saved from working expenses and consolidation, without reckoning the advantage of borrowing at a lower rate of interest, and so paying off debentures paying 5 and 6 per cent. The experiment would be well worth making, even at a greater cost, but the increased stimulus given to trade would probably make the experiment a financial success.

## APPENDIX.

TABLE I.—*Amount of Preferential and Guaranteed Railway Stock in Circulation in the United Kingdom at Various Rates.*

Rate of Interest.	Preferential Stock.			Guaranteed Stock.		
	England.	Scotland.	Ireland.	England.	Scotland.	Ireland.
Per cent.	£	£	£	£	£	£
0	93,864	75,632	255,503	—	—	—
2½	315,400	—	—	2,110,000	—	—
3	—	—	—	111,700	602,125	—
3¼	—	—	—	366,698	—	—
3½	75,000	—	—	23,750	436,526	—
3¾	177,580	44,260	—	—	125,000	—
4	4,969,609	1,916,747	1,525,693	8,730,990	830,000	100,000
4⅓	200,000	159,369	11,050	—	—	—
4½	20,650,446	6,087,667	463,917	7,105,972	966,339	120,000
4¾	—	—	—	40,000	—	—
5	55,837,894	6,189,259	2,639,358	25,694,793	3,408,205	289,850
5¼	—	278,540	—	—	—	—
5½	612,740	—	83,612	914,884	394,200	—
6	2,206,006	728,170	560,965	7,717,968	567,343	—
6⅓	—	—	—	—	1,141,333	—
6¾	—	—	—	—	600,000	—
7	562,877	1,112,122	—	80,654	150,000	—
8	227,500	—	—	580,570	396,355	—
10	435,840	—	—	750,000	200,000	—
	86,364,756	16,591,766	5,540,098	54,227,979	9,817,426	509,850

*Full Selling Price on 27th March, 1873, of Ordinary Stocks and Shares Quoted on the Stock Exchange.*

No.	Nominal Amount. [000's omitted.]	Name of Railway.	Last Half-Year's Rate of Interest Paid.	Full Selling Price per Cent.	Market Value. [000's omitted.]
1	£ 2,022,	Bristol and Exeter .....	7	112	2,264,
2	6,503,	Caledonian .....	5	97	6,300,
	930,	," .....	—	30	279,
3	459,	Cambrian .....	—	30	137,
4	575,	Cornwall .....	Nil	40	230,
5	1,400,	East London .....	—	30	520,
6	1,114,	Furness .....	10	165	1,838,
7	4,640,	Glasgow and South-Western	6½	130	6,032,
8	83,51,	Great Eastern .....	—	41	3,325,
9	6,120,	," Northern .....	8½	130	7,956,
10	864,	," , of Scotland	Nil	35	302,
11	11,535,	," Western .....	5½	123	14,188,
12	1,233,	Highland .....	6	106	1,305,
13	13,334,	Lancashire and Yorkshire ....	9½	150	20,000,
14	31,000,	London and North-Western	8½	145	44,950,
15	7,600,	," South-Western	6½	105	7,900,
16	6,840,	," Brighton, &c. ....	4½	76	5,198,
17	8,294,	," Chatham and Dover	Nil	25	2,073,
18	5,490, {	Manchester, Sheffield, and Lincolnshire .....	4½	76	4,172,
19	3,890,	Metropolitan.....	2	70	2,723,
20	2,250,	," District .....	Nil	33	750,
21	610,	Monmouthshire .....	7	122	744,
22	16,000,	Midland .....	7½	135	21,600,
23	2,750,	North British .....	½	67	1,842,
24	17,000,	," Eastern Counties .....	9½	157	26,690,
25	1,975,	," London .....	6	118	2,330,
26	3,200,	," Staffordshire .....	3½	68	2,176,
27	276,	Rhymney .....	—	73	201,
28	1,500,	South Devon.....	4½	75	1,000,
29	3,800,	," Eastern .....	6½	105	3,990,
30	877,	Taff Vale .....	10	173	1,517,
	172,442,				194,532,

*Note.—Average Price 112·8.*

**VALUE of Various Railway Stocks and Debentures.**

	Nominal Amount in Millions.	Average Value of 100 <i>l.</i>	Market Value in Millions.
	£	£	£
Debentures .....	82	100	82
," stock .....	68	110·3	75
Debentures and debenture stock .....	150	104·7	157
Preference stock.....	173	115·6	200
Ordinary .....	230	108·7	250
Total .....	553	109·8	607

*Annual Revenue of the above Stocks and Debentures.*

	£	
Debentures and debenture stocks .....	6,526,000	{ Calculated from rates of interest paid on the above 150 millions: average 4·375 or 4½ per cent.
Preference stocks .....	8,650,000	{ Calculated on above 173 millions at 5 per cent.
Debenture and preference stock .....	15,176,000	
Ordinary stock .....	10,594,000	{ Estimated after deducting fixed charges and preferential interest from the aggregate returns: equal to 4·6 = 4½ per cent.
Total revenue .....	25,770,000	

## DISCUSSION ON MR. RICHARD BIDDULPH MARTIN'S PAPER.

MR. FREDERICK HENDRIKS said he should wish to know from what source the writer of the paper had obtained some of his figures, because certain of them appeared to be very inaccurate. The proposal of the paper was that the Government should issue £43,000,000*l.* of debenture stock at 4 per cent., £3,000,000*l.* of preference stock at 5 per cent., and £13,000,000*l.* of ordinary stock, or its equivalent, at 4 per cent., making a total of £59,000,000*l.* In another part of the paper the capital of the railways in debenture, preference, and ordinary stock was set down at £52,000,000*l.* These last figures were no doubt accurate enough, because they corresponded with the last Board of Trade returns, or £52,680,000*l.* at end of 1871. There was then a difference of £3,680,000*l.*, and if the scheme were carried out upon that footing it was perfectly clear that there would be a confiscation of the capital of the stockholders in the railways to that amount. He had worked out the figures in a rough way, and found that the interest at the proposed reduced rate to the debenture holders would be £5,720,000*l.* per annum; to the preference stockholders £5,150,000*l.*; and to the ordinary stockholders £8,520,000*l.*, showing a total of £19,390,000*l.* of future net income to be paid to the present holders of various descriptions of stock. The present net income divided amongst the holders of railway stock was £5,740,000*l.*, consequently there would be a difference of saving to one part of the community and of loss to the other of £3,350,000*l.* per annum, and the positive loss to the railway debenture and share holders, taking the capitalised value of the £3,350,000*l.* diminished income all round at twenty-five years' purchase, would be upwards of £150,000,000*l.* Thus, although no doubt it was far from the intention of the author of the paper to bring forward any plan which would savour of confiscation or communism, yet unfortunately the figures which he had given amounted to a positive confiscation of £150,000,000*l.* worth of the property of the railway stockholders of this country! He did not think they would submit to such a scheme, nor to any other which did not give them a profit. No account was taken in the paper of the progress of the future in its money value to present railway stockholders, although there could be little doubt that there would be an increase to the present dividends, which, even in 1871, amounted to 4*l.* 13*s.* 1*½d.* per cent. all round, after paying all expenses. What, again, was the accusation against the present state of things? It did not appear to him that there was much to complain of. If the Government had charge of all the railways he did not believe they would be able to reduce the fares and maintain efficiency. The working expenses in this country were at present under 50 per cent., while in America the percentage was 65 per cent. Neither did he think Government control would diminish the liability to

accident, or ensure greater civility and attention to the public; while there was very little likelihood that the Government would improve the state of things complained of by Mr. Martin, as to insufficient station accommodation, or that the waiting-rooms would be made more comfortable than at present. If the capital invested in railways were under Government guarantee, of course the result at the outset would be that the price of guaranteed Government railway stock would range higher in the market than that of ordinary unguaranteed railway stock at present, but new comers would have no inducement to invest in that stock which would come into competition with consols, and both stocks would fall. It would really be a national disgrace if Englishmen ceased to manage such great enterprises themselves, and confided them to the Government. There was not the slightest analogy between the railways and the Post Office or telegraphs. These latter systems required to be brought to everybody's door; but it was perfectly impossible to do so with railways. Nor under Government management would the less important districts in the country be better served than at present, because in the eyes of the Government all would have an equal claim. Why should town A or village B have a greater claim to increased railway accommodation—to be secured probably at a financial loss to the nation—than town B or village C. It would be introducing the principle of concurrent endowment. All would be wanting something, and it would be difficult to get out of the imbroglio.

Mr. S. BOURNE said—Railway travellers need have no fear as to the civility and attention they would receive from Government officials. The feeling was rapidly spreading that the interest of one member of the community was as important as that of another, and that public servants, whether paid out of the funds of the State or by the great companies, must give the necessary amount of attention, if the business which they represented was to prosper. The writer of the paper appeared to have avoided the main question for consideration—namely, the possibility of a governmental body successfully working such a system. There was no correspondence whatever between the railway system and the telegraph or Post Office system. All that the Post Office had to do was simply to receive a document at one place and deliver it at another, doing this at one uniform price all over the kingdom, and basing that uniformity upon the supposition that the cost of a letter arose chiefly from the reception and delivery, and that the variation in the charge for transit occasioned but a very small difference in the expense. This could not be said with regard to goods carried by railway. Then there could be no doubt that the establishment of preferential rates, offering peculiar facilities to coal owners and mine owners for the carriage of their goods, had led to the introduction of those products into London at a less cost than would otherwise have been the case, and he did not think this was a question into which the Government could at all enter. It was not simply the sending off a train at a certain hour, with a certain number of carriages and a certain amount of steam power; but the question of the delivery of pack-

ages, the collection of goods, the employment of horses, carts, and servants in various places, must be considered. If all these various minutiae came under the supervision of a Government establishment, with head quarters at a central point, the difficulties would be found so great that there would be no probability of securing the same profit as if it were left to private enterprise.

Mr. DAVID CHADWICK, M.P., said—He should hail any proposal that would increase the penalties for bad management to which railway companies could be made liable. He warmly supported the object of the Government measure, introduced by Mr. Chichester Fortescue, for the control and vigilant supervision of railway and canal property, and he should sympathise to a considerable extent with the views expressed in the paper if it were not that he dreaded anything in the shape of Government interference with the industry or with the mercantile operations of the country. When the Government had to make such a purchase, it was likely to degenerate into a job. If he had been in Parliament at the time, he would have raised his voice against the purchase of the telegraphs at the enormous price which was given. If there could be any certainty that the Government could purchase the railways at a fair market price, the arguments advanced in the paper would be available, and might perhaps induce Parliament to take some steps towards acquiring the management of railways. In his own experience he had met with several instances of the gross mismanagement, so far as the convenience of the public was concerned, of the present system. It was well known how the London and North-Western Company had retarded for years the traffic of the North Staffordshire Railway. Only two months ago, when in Paris, he met a French gentleman, one of the contractors with the French Government to carry the French mails to England, who told him that the South Eastern Railway Company and the London Chatham and Dover Company, having themselves been competitors for the contract, entered into a combination to prevent that contract from being carried out, and had refused to allow the passengers coming over the Channel by the French mail boat to book through from Paris to London.

Mr. LLOYD.—They were always behind time.

Mr. CHADWICK said, that on his arrival in England he made inquiries on the subject, and it was an undeniable fact that the railway companies had combined together, and had refused to allow passengers by the French mail boat the ordinary and usual facilities of purchasing in Paris through-tickets to London. Parliament, representing the interests of the whole nation, gave to the railway companies a virtual monopoly of the traffic, and yet permitted them to play such tricks so materially affecting the convenience of the public. The remedy was, that Government should retain a strong hold over the railways. Reference had been made to the civility of railway officials and their promptitude in answering all applications made to them; but only fourteen days ago he went from London to Manchester with a return ticket, and happening to call at Birmingham he took another ticket. When he arrived

in London, he sent his return ticket to the company and asked for a repayment of the amount, as he had returned within three days; but he received a letter in reply, asking him to tell the number of his ticket from Manchester to Birmingham, which of course he did not know, and he had lost the half fare accordingly. Government officers were certainly no worse than railway officials, either in the promptitude of their replies or their courtesy and attention to the public. He objected to the proceedings of railway directors who used their immense influence in Parliament to obtain legislative enactments to restrict the amount of damages for loss of life caused by their negligence. Instead of diminishing, he would double the amount of responsibility attaching to the railway companies. No better instance of the arrogance of railway officials could be found, than that afforded by the recent statements of Mr. Bancroft at the Euston Square meeting, and of Sir E. Watkins, who has publicly charged with incompetence the gentlemen who, as Government Railway Inspectors, have been for many years engaged in investigating and reporting upon railway accidents, and who have been constantly calling the attention of railway authorities to the necessity of adopting improvements which would render railway travelling very much safer. He did not believe the Government or Parliament would entertain the purchase of railways; for if they attempted to do so, they would be charged in many cases three or four times the present market value. For a railway share now standing at 15*l.*, the public might have to pay 25*l.* or even 30*l.* If the railways could be purchased at a fair price, it might some time perhaps be advisable to do so, but meanwhile the main provisions proposed by the President of the Board of Trade in the "Railway and Canal Traffic Bill" would be the first step towards effectual improvement in the management of railway property for the convenience of the public.

Mr. LUMLEY asked the author of the paper what redress persons could have for accidents and loss resulting from negligence if the Government had the management of the railways?

Mr. LLOYD.—A writ of right.

Mr. LUMLEY said that might or might not be given, according to the advice tendered to Her Majesty by the Secretary of State. He also wished to know whether any information could be given as to the result, whether satisfactory or otherwise, in reference to those foreign countries where the Government had the control of the lines. With regard to the combination between the two companies referred to by Mr. Chadwick, to prevent a foreigner from carrying the mails, might not the Government itself sometimes, under similar circumstances, consider it advisable to place difficulties in the way of foreigners?

Mr. GUTCH said, as a matter of right, no writ of right could go, but only as a matter of grace. Persons wishing to secure themselves against loss could do so by a penny insurance.

Mr. BAXTER said—A remedy for loss or injury by accidents might

be obtained by a system of compulsory insurance, in which every passenger would pay an additional penny on his ticket, so producing a large revenue, out of which compensation could be paid. If, in the infancy of railways, the Government had had the control, very few railroads would have been made, and the country would never have been served so well as it had been. England was the home of railways, and other countries had merely imitated what had been done here. The first stage in the history of railways was the existence of a multitude of little lines, but now these had been amalgamated into fourteen or fifteen districts, served by great companies, which had absorbed the majority of the smaller ones. The question now was whether another step should be taken, and these districts amalgamated into one great system. Many reasons in support of such a proposal might be shown. In the first place, there was the temptation to the financier. By law, all railways which had sprung into existence since 1844 might be acquired by the State at twenty-five years' purchase. For the last ten years the increase of the gross receipts on railways had gone on at the rate of 2,000,000*l.* a-year. If the railways could be bought at, say, 800,000,000*l.*, and if that could be borrowed at 3 per cent., 24,000,000*l.* a-year would be required, but at present the traffic receipts were above 25,000,000*l.*, increasing yearly, and in ten years that would give an important surplus, which would lighten the taxation of the country. This object would be worth securing, if compensation could be settled on reasonable terms. Another advantage would be the uniformity of working, and the means of sending goods from one end of the country to the other without a single check. Great saving might also be effected in the management, for a few officials would take the place of numerous boards. In Belgium, an advantage of the Government acquiring a portion of the railways had been the adoption of a system of diminishing the fares for long distances, by which the number of passengers had been greatly increased. The same system of reducing the rates on goods for long distances had brought the distant manufacturing and trading towns nearer to each other. Such advantages as these would overbalance a large number of deficiencies in the working. It would be a most difficult thing to assess moderate compensation and to raise 800,000,000*l.*, and to manage nearly 16,000 miles of railway as one system, and there were great doubts whether it was really practicable; but if it could be done, he did not doubt that it would be a great advantage to the trade and convenience of the country.

Mr. HAMILTON said he could not conceive that any amount of Government jobbery would equal the jobbery which had taken place in connection with railways.

The discussion was then adjourned.

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*On Tuesday, the 25th March, the Discussion was resumed by*

CAPTAIN TYLER, who said—The question raised before this Society by Mr. Martin, in his paper last week, is one of the highest importance — dealing with enormous interests, including various subjects for grave deliberation, and involving the future administration, management, and conduct of the chief means of transport and communication in our industrial country. It is, indeed, a question worthy of the best attention of this valuable Society. And I hope that, after having been thus introduced to their notice by Mr. Martin, it will receive such consideration and be followed by such an amount of discussion as shall leave a definite conclusion in the minds of its members.

Having been specially honoured with an invitation to take part in the discussion, it will be my humble endeavour to conduce in some small measure towards such a result; but I wish it to be distinctly understood that I am here in a private capacity only, and that I do not come forward as an advocate of State purchase, or of anything else. I only desire to lay before you, as fairly and concisely as I am able, the facts, the arguments, the difficulties, on different sides of the case; and I wish to leave those who hear what I submit to form their own conclusions.

Now, the feeling which rises first and most powerfully in the human breast, in considering this or any other question, is that of self-interest. Those who use the railways inquire within themselves, shall we be better served? Those who, being shareholders or bondholders, are the proprietors of or are more or less pecuniarily interested in the railways, consider what they are likely to lose or gain; those who are engaged as officers or servants in working, as directors or chairmen in administering, the railway system, ask how it will affect their positions. And others, again, may as naturally look to the magnitude of the operation to be undertaken, the possible thanklessness of the task to be performed, the credit or discredit that may result, the difficulties or dangers to be encountered, the trouble to be entailed, and the probable advantages to be obtained.

The truth of these observations was partially and, may I say, amusingly illustrated in the course of the discussion in this room at our last meeting. Various speakers began at once to consider whether they would be able to obtain replies more or less civilly, or more or less speedily, to their inquiries or complaints, from the officers of the companies, or from officers of the State substituted for them. They detailed their personal experiences as to over-crowding in carriages, or the recovery or otherwise of portions of their fares for return-tickets, the second halves of which they had not been able to utilise. They discussed whether, in cases of personal injury, they would be able to recover compensation.

Without wishing for a moment to depreciate the value of these, which are undoubtedly important considerations, I would at the same time ask you to follow me now into points of still higher importance, and, setting aside all minor matters of mere individual interest, to seriously consider the question before us—whether the

railways should continue for the great and unknown future to remain in the hands of joint stock companies, or whether they should be purchased by the State,—and to discuss this question with a view to the general well-being of the community and the general prosperity of the country.

In commencing such a discussion, we are confronted at the outset by a question which is really at the base of the whole subject; but which is too frequently ignored. It is a question which cannot properly be overlooked. It is wise to discuss it now, while there is yet time, and not to postpone its consideration till it becomes forced upon the community by more stubborn facts. The question to which I refer is simply this:—What will happen if the State does not purchase the railways? I do not mean what will happen just at this moment, or even within the few years immediately before us; but what will happen within such a reasonable time as it is necessary to look forward to, and to think about providing for? And what will be the *ultimate* result if the railway system is allowed to remain in the hands of joint stock companies? In order to reply to this question we must appeal to the experience of the past, and we must look to the indications of the present. The experience of the past may be briefly stated. Combination amongst a great number of small companies has been rapidly effected. Indeed, the whole railway system has grown up within the lifetime of many of us. And the greater part of it is already in the hands of a small number of large companies. Out of 15,376 miles of railway at the end of 1871, 11,058 miles were owned or worked by only fifteen companies, and the remaining 4,318 miles were in the hands of ninety-one companies. In fact, the experience of the past is thus summed up in the admirable report of the Amalgamation Committee of last year, which was so ably presided over by the President of the Board of Trade:—“*These facts and figures afford proof that the general recommendations and resolutions of committees, commissions, or Government departments, have had little influence upon the action of private bill committees, and have not stayed the progress of the companies in their course of union and amalgamation.*” The experience of the past is also before your eyes in the map upon the wall, on which is clearly depicted the railway districts into which the country is divided. Competition by sea has been effective in the past, and may continue to be so in the future, but only to a limited extent. Competition by canal would be of little avail, even if the whole of the canals of the country were freed from the influence or ownership of the railway companies.

The indications of the present are sufficiently plain. There is a strong tendency to further combination. Chief amongst these combinations is that of the London and North-Western with the Lancashire and Yorkshire Company. The London and North-Western Company, working in intimate alliance with the Caledonian Company, stretches from London to Aberdeen; and it is seeking in Parliament, for the second year, to legalise an amalgamation with the Lancashire and Yorkshire Company, which has been effected and acted upon in practice. These three companies together own or work 2,685 miles of railway, or nearly one-fifth of the mileage of

England and Scotland ; and their joint capital, including the capital of lines worked by them, amounts to 120,938,190*l.*, or more than one-fourth of the total railway capital of England and Scotland. Amalgamation amongst smaller companies may frequently be desirable in the public interest, as enabling better service to be performed, and placing the smaller companies by combination more nearly on an equality with the larger ones. But an amalgamation of interests, embracing one-fifth of the railway mileage and one-fourth of the railway capital of Great Britain, and spreading through the length and breadth of the land, can hardly be contemplated without alarm, not only as regards the power and influence of the joint company, but also as showing what may be expected to follow in other directions. It is only in the nature of things that other companies, such as the Midland and Glasgow and South-Western Companies, and the companies forming the East Coast route, more or less in rivalry with the London and North-Western Company and with one another, should seek counter-acting combinations, in order to strengthen their respective positions. And it is not too much to assume that this process will be carried on more or less rapidly, until, before many more years have passed away, the country will be parcelled out into a very moderate number of railway districts, and will thus be in the hands of a few companies. That result having been arrived at, the further progress of amalgamation can hardly be doubtful, difficult, or slow. As surely as oxygen and hydrogen, when brought together in proper proportions and under proper conditions, forcibly combine their atoms to form water, so surely will monopoly of railway interests result under favourable circumstances. Competition between railway companies can only be temporary. It still exists to some extent, both in construction and in traffic facilities, but it is dying out. And when competing companies have respectively obtained what appear to them their positions of greatest advantage, they are then prepared, like chemical atoms, to combine. The conclusion as to competition, are thus stated at p. xxix of the Report of the Amalgamation Committee. In answer to the question, "How far does competition exist, and how far can it be relied on?" They reply, "There is little real competition in point of charges between railway companies, and its continuance cannot be relied upon. There is at the present time considerable competition in point of facilities, but the security for its permanence is uncertain." And as regards amalgamation, they say (at p. xlii), "It would have been more satisfactory to them if they could have made definite recommendations as to the limits within which amalgamation should have been allowed and beyond which it should be forbidden. But this they find impossible. They can only point out, as they have done above, the possible ultimate dangers of unlimited combination, and call attention to the fact that alliances which now exist, coupled with amalgamations which have been already proposed, may lead to the creation of companies very much larger and more powerful than any which would be formed by the schemes (including that of the London and North-Western and Lancashire and Yorkshire Companies) now before the Committee."

Whilst adding, that "competition between railways exists only to a limited extent, and cannot be maintained by legislation," and that "combination between railway companies is increasing, and is likely to increase, whether by combination or otherwise," the Amalgamation Committee proceed to recommend the constitution of a special tribunal, to be entitled the Railway and Canal Commission. A bill which is now before Parliament seeks to give effect to their recommendations. The author of the paper speaks disparagingly of the prospects of this proposed tribunal, and he appears to consider that it is not likely to have a long life. It is true that the railway commission established in 1846 only lasted five years; but its duties were different from those sought to be given to the tribunal now proposed. At all events, the Amalgamation Committee have not been able to devise, after a lengthened and elaborate inquiry and an exhaustive report, any better, or, indeed, any other method of control over the railway companies. The tribunal, no doubt, will, if the present bill becomes law, have a full and fair trial; but its establishment does not in reality affect the question now immediately before us, inasmuch as the committee—the ablest that ever sat upon railway subjects—themselves say at the conclusion of their report, "*If the above recommendations are adopted by Parliament they will not have the effect of preventing the growth of railway monopoly.*"

We come back, then, to the questions with which I set out, "What will happen if the State does not purchase the railways? What will be the result if the railway system is allowed to remain in the hands of joint stock companies?" and the answer to those questions is one from which there appears to be no possible means of escape. It is to be found in one word—Monopoly. And it will be a monopoly of joint stock railway interest in Great Britain. The advantages of combination to the companies themselves are obvious. The only thing to be wondered at is their folly in competing and fighting with one another as much and as long as they have done. Only recently the shareholders of certain northern railways have shown by their proceedings that they were at length alive to the folly of allowing their directors and managers to do so; and when the shareholders of the various companies once find out their own power, and see more clearly the direction in which their interests lie, you cannot force them to compete or oblige them to fight with one another. Sooner or later, therefore, and probably before many years have passed quickly away, there will be absolute and universal railway monopoly; and the question which Mr. Martin has raised in this room is practically this: *Would the British public prefer, by State purchase, railway control and management by the State, or would they prefer the only alternative which lies in the future before them, complete monopoly by a vast combination of railway companies?*

We have next to consider the difficulties which would have to be encountered in the event of State purchase being found necessary, or, to put it in another way, if it were decided that State purchase could not be avoided. Those difficulties may be enumerated under the following headings:—

1. The financial difficulty, comprising the mode of effecting and

carrying out the purchase, and of avoiding serious financial disturbance in the process.

2. The difficulties of administration and management, including that of patronage.

3. Demands upon or complaints to the State management, as to rates and fares or improvements in the service, or for compensation, or for the construction of new lines.

Commencing with the financial question, the first observation to be made is that there is at present no legal mode of dealing with it. The Act of 1844 is inapplicable to certain railways or portions of railways—of which a list is appended,—sanctioned or constructed previously to that date, and it does not even provide the means, for reasons into which it is not necessary here to enter, of properly dealing with the remainder. A fresh Act would therefore be required to enable any Government to deal with the question; and, practically, a bargain would have to be made with each railway company. Further amalgamation would facilitate matters in one sense, inasmuch as there would be a smaller number of companies to deal with; but it would very much aggravate the difficulties in another sense, because the individual companies would become more powerful and influential, and the amounts of money involved at each operation would be greater. The obvious mode of avoiding extensive and serious financial disturbance is by a system of gradual purchase,—such as is, and has been for some time in progress in Belgium,—and fresh combinations would thus tend to increase the difficulties to be encountered. If State purchase is to take place the sooner, from this point of view, it is undertaken, the better. And the same is the case from another point of view. Railways are an improving property. If the State had purchased them ten years ago how enormous would have been the profit on the transaction! Will they not continue to improve? There is no reason, apparently, why they should not improve in value in the next ten years as much as in the past ten years. As long as the population, the wealth, and the general prosperity of the country continue to increase, so long must the value of railway property continue to improve. There will be ups and downs. The cost of working expenses will ever vary with the prices of labour, of fuel, and of materials, but there must be improvement upon the whole until the progress of the country stands still, or has a downward tendency. And may that day be distant!

But let us consider more closely the question: What is the purchase of the railways by the State? What does it mean? It is at first sight a gigantic operation. The ordinary mind naturally and instinctively recoils from it, as something too vast to be thought of as a practical measure. 550,000,000*l.* of nominal value! part of it at a considerable premium, part of it at a heavy discount. More than 600,000,000*l.* of money to be dealt with! In one sense it would be a purchase, inasmuch as the ownership would be transferred from joint stock companies to the State. But in another sense it would not be a purchase at all. There need be no transference of ownership as regards the real owners, the proprietary, inasmuch as the same individuals who now hold the railway stock of

companies may continue to possess, if they desire it, the railway stock of the State. Ordinary, preference, guaranteed, or debenture holders, may receive State paper in place of Company paper, and receive dividends from the State in place of from the Companies. And thus the change would become, not necessarily one of owners. Nor would it be even a change of management. The officers and servants of the companies would, as a rule, remain in their places. The management and working would be conducted by the same heads and the same hands. The change would rather be one of administration. The State authorities would simply take the place of the railway chairmen and directors ; but hardly even so, because the same chairmen and directors would in most cases become the administrators for the State ; and further, those portions of the duties of the chairmen, directors, and general managers, which consist in scheming against one another, would cease, and the whole of their time would be available for the legitimate duties of traffic management and development. All would, of course, expect to reap some advantage from the change, and all interests must be respected. Those who are engaged in duties of administration, such as chairmen and directors ; those who are engaged in duties of management, such as officers and servants ; and all who have vested interests, may be utilised, and must be fairly considered. But these matters pertain partly to our present heading of financial difficulty, and partly to our next heading of management.

To return strictly to the financial question, the mode of purchase is the next point for discussion. And here it would not be necessary to raise at once 600,000,000*l.* of money, or whatever the amount may be, or to purchase more than the system of one company, or that of one of the principal companies, as a commencement, or even to raise money for the purchase of a moderately sized system. It may fairly be expected that a very considerable proportion of the proprietary would, under arrangements judiciously negotiated, and calculations fairly made, be content, and even eager, to receive State paper in place of their company paper. And it would only be necessary to raise, by the floating of State railway stock, a sufficient amount of money to satisfy the claims of those who preferred to be paid off in cash. There would thus be a partial transference of proprietary from those who received money to those who purchased the State railway stock. And this course would have to be repeated through a series of years, until the whole of the railway system became State property. The advantage of such a mode of purchase would be found alike in the experience gradually gained, in the difficulties gradually encountered, and in the avoidance of serious financial disturbance.

It is hardly necessary or desirable, even if time would admit, that I should here enter further into this part of the question, excepting to add that such proportion of money as would require to be raised by the sale of State railway stock through a series of years for the purposes of these operations, and for paying off those railway proprietors who preferred to realise an increase of capital, and to seek fresh investments at a higher rate of interest, would not be in any way analogous to money raised by way of loan, or otherwise,

for which interest had to be provided. There is a natural abhorrence in the English mind to an increase of national debt, national burdens, or national obligations. In this case, no further taxation would be required, the State would obtain possession and control of a property which must improve as long as the country continues to increase in prosperity. For that length of time, there would necessarily be constantly accruing increases in income which might be applied partly in redemption of State stock, and partly in reduction of rates and fares, as circumstances would dictate to be for the good of the country.

It is not yet generally known, and you will be interested to learn, that the accounts for 1871, which I have lately analysed in detail, show that the average dividends on ordinary stocks in that year exceeded the average dividends or interest on the fixed charges preferred to them. The average dividend on ordinary stocks was (including those on which no dividend was paid—namely,  $31\frac{1}{2}$  millions out of 230 millions), 5·07 per cent.; while the fixed interest on stocks and loans preferred to ordinary stock (including also those which received no cash payment, namely—8 millions out of 322 millions), averaged only 4·42 per cent.; and the average rate of dividend or interest on the whole,—see note to Table No. III, p. 263, appended—was 4·58 per cent. The turning point having thus been reached and passed, the profits of railway working will increase more rapidly (though fluctuations may occur in the future), than they have done in the past. There need, therefore, be the less fear as to any obligations which the State would incur in the event of purchase, and there is the greater certainty as to the profit to be derived from the transaction.

The second difficulty to be encountered is that of administration, including detailed management and patronage.

As with the former so with this difficulty, it assumes its most formidable aspect in presence of the idea of the State suddenly assuming the control of 15,000 miles of railway, with receipts of, say, 48,000,000*l.*, and a working expenditure out of them, say 23,000,000*l.* annually, with upwards of 200,000 railway officers and servants to supervise, with 375,000,000 passengers to be carried, 170,000,000 tons of goods and minerals, &c., to be transported, and 180,000,000 miles to be run by trains. Looked at from this point of view, the subject is to some overwhelming. The responsibility for the safe conveyance of so many passengers,—for the safe collection, transport, and delivery of so much goods and mineral traffic scattered over the whole kingdom,—for the economical working of so many engine-works, and works connected with the maintenance and repair of the rolling stock and the permanent way over such a system,—with 10,500 engines and 312,000 vehicles on the establishment—is almost too much for certain minds to contemplate.

But there are existing departments of the State whose duties and responsibilities, similarly stated, look even more formidable. There is a Secretary of State for India, who is required to answer in the British Parliament for the good government of 200,000,000 of people, in a far country, 1,800 miles long by 1,500 miles broad; and for the administration of a revenue as great as that which

is derived from the gross receipts of railways in this country. And there are other heads of departments whose duties might also be described in an equally alarming manner, if all the statistical details were similarly paraded and presented to view. Still higher totals might be produced from military and naval forces and establishments scattered over the British Empire; and the German Emperor wielded in his recent invasion of France forces numerically far greater than the army of railway employés which looks so terrible; and did so with a precision that has received nothing but praise and admiration, under every conceivable difficulty, of climate, distance, and disturbance, in an enemy's country.

It is, after all, only a question of proper organisation and suitable machinery. The difficulties above cited have a much less formidable appearance when they are closely considered; and especially when two facts are remembered: (1) That it is not necessary for the State to assume the charge of the whole railway system at any one time, and (2) that all the organisation and machinery are already provided, even if it had all to be taken over at once, for working it. Further, this organisation, complicated as it may be, and wide spread as are its ramifications, is kept in working order by constant duty; and it is just as available for work under the State as it is for work under boards of directors. The different railway systems have their general managers, their traffic superintendents, their locomotive superintendents, and their engineers; and these have their departments, with men, machinery, and plant, in active operation. They would, further, have, many of them, more time and attention to devote to their duties, and better means of performing them if they were all working under one general management, and for one common object—whether a great joint-stock association or the State—than under the present system. Parliamentary railway contests would cease, law suits between railway companies would be no more. Traffic would not be forced in wrong directions. Facilities would be increased. Through rates and fares at lower figures would prevail. There would be no clashing arrangements between rival companies at junction stations. Managers would cease to out-manœuvre one another, and would devote themselves, each to the improvement of his own district; and a rivalry of efficiency would thus take the place of perversity or hostility in working.

The State, therefore, in taking over, first one portion, and then gradually, in the course of a series of years, the whole of the railway system, would find in each case, the detailed organisation and machinery ready to its hand; and would in the act of doing so at once make it more perfect by removing in the course of gradual combination the strains and jars which now tend to diminish its utility. It would further be able to introduce improvements from time to time, as they might be found to be expedient; and it would have at its command the best railway talent in the country for doing so. Ultimately, of course, there would be a railway minister, and a railway council in London, with systems of local management at different important points. The existing directors would, with their knowledge of local interests, be useful, some on the central

council, and some on local councils ; and the machinery of management under the direction of these councils, taken over in the first instance without change, would gradually be adjusted to the new state of affairs. The railway minister and the central council would be to some extent analogous to the Secretary of State for India and the Indian Council ; but with the additional advantage, that they would jointly administer the concerns of a property within easy reach of them, instead of the affairs of a country at a great distance from them. Both central and local councils would necessarily be divided into committees having special duties in connection with traffic, rolling stock, engineering, finance and *personnel*.

The last mentioned committee would have to deal with a subject which has been, perhaps, more than any other, referred to as a difficulty in connection with State purchase,—that of patronage. But the abuse of patronage is, after all, now comparatively a thing of the past, more especially as regards the higher appointments in the gift of the State. If any one doubts it, let him try, for himself, for his son, for any relation, to obtain any appointment worth having in the public service. Great must be the influence, indeed, which can force the defences of the Civil Service Commissioners, or those of the examiners for the naval and military service. They are strengthening their outworks and enlarging their fortress continually ; and if the railway service ever is administered by the State, they will no doubt look upon it as “fresh fields and pastures new” for their operations. But independently of their interference in robbing patronage of its charms, there are other considerations which make railway appointments no sinecures. Amongst the great mass of railway employés, the work is hard and the pay light. The responsibilities and risk are not inconsiderable. They must begin in the lowest positions, as porters, clerks, booking clerks in the traffic department ; as labourers, platelayers, fitters, pupils, and apprentices in the engineering departments ; and they can only rise to the higher positions gradually, and for the most part after ample experience, as they show themselves fitted for their work. That work has to be performed much of it under the eye of the public, whether with Company management or with State management, and those who fail to perform it properly are soon found out.

There have, no doubt, been from time to time instances of mismanagement in certain public departments which have thrown great discredit upon Government administration. But it would be easy to rival them by accounts of mismanagement by railway companies. There is always a greater tendency to outcry, and to make the most of the errors of Government officials on the part of those who are engaged in private, commercial, or joint-stock enterprise, than there is to criticise the proceedings of companies ; and it is, on the whole, to the advantage of public departments that it should be so. The fact is we are all human, and we all require to be kept up to our work, in whatever employment, by the pressure of public opinion or otherwise. But there are different degrees of efficiency, or the contrary, in Government departments, which have justly been characterised, some as earning and others as spending departments. I am not here to defend the latter ; but I do assert that the affairs of

earning, working departments of the State are, on the whole, better managed and more economically conducted than the concerns of railway companies, and especially in those parts of their business which are carried on under the public eye. This point was so well referred to by Mr. Scudamore, in an address which he recently delivered in Edinburgh, that I will venture here to read you an extract from it:—

“They could do a great deal by kindly praise of a civil servant to further the advancement of the public interest. But there was another way of making civil servants—at least of making Post Office servants—efficient; and he was inclined to think that they did not themselves recognise how powerful they were in that respect. It was customary to say that the Post Office was popular, because it was efficient. That was rather the wrong way of putting it. The Post Office was efficient because it was popular; and it was they who made it efficient, because it was necessary to them that it should be so. They did not understand how large a part they had in keeping all the servants of the Post Office up to the mark from day to day. It was very fortunate for them and the country generally that the efficiency of the Post Office resulted from that cause; and not from the zeal or energy of any particular set of men who might be in office at a particular time. If the efficiency of the Post Office resulted from the special talent or the special energy of any particular set of men, the Post Office might decay when those men had passed away. The great establishment of which he was speaking was rendered efficient because it was worked under the eye of the public, its master; because it was brought face to face with that master, not merely from day to day, but from hour to hour; because it did work that was absolutely necessary to its master—which, when well done, was of the highest possible advantage, and which, if ill done, was utterly intolerable. He dared say people generally thought that the Post Office was in some mysterious way superior to other Government departments. That did not result from the ability of the people in the Post Office; it resulted simply from the pressure which was put upon that branch of the civil service by the public. Let them just consider the different way in which they treated the Post Office from that in which they treated other Government departments. They all knew perfectly well that in Scotland for many years—he might say for centuries—there had been a perfect horror of illicit distillation; but he did not suppose that even in Scotland any man ever thought of reporting the Exchequer for laxity of supervision. Again, he did not suppose that in that room, or the city of Edinburgh, there was anybody who would suddenly rise at his breakfast table and say to his wife, ‘My dear, that rascally tax-gatherer has not called for three years; I will write to the Inland Revenue Commissioners, and get him dismissed.’ But a dilatory letter-carrier; a postmaster who could not cash a money-order; a telegraph clerk who made blunders, brought down a terrific complaint from the offended person. They would not allow those officials to say as Wordsworth said of the human race—

“‘Our birth is but a sleep and a forgetting.’

Quite the contrary ; they continually kept the Post Office up to the mark, and that, he thought, was a salutary thing for the public. It was well that the public should know the power which they had over the Post Office ; that it was their complaints, that it was their continual determination to have the work well done, that made it well done. He might go a little further and say that *if at any time the Government should take upon itself the acquisition of the railways, somewhat similar results would follow.* They were not to suppose that he was going to advocate the acquisition of the railways. He was not going to do anything of the sort ; especially he was not going to ask that the railways should be attached to the Post Office. They might as well attempt to put a set of ostrich eggs under a barn-door fowl as give the railways to the Post Office. But if ever the Government should acquire the railways, and establish a department for their management, depend upon it that the public would keep that department in order ; that, being brought face to face with it, depending upon its well-doing for their convenience, and having to look to it for their security, they would take care to see, through the Press and Parliament, that the officers of that department were thoroughly efficient, zealous, and up to the mark. They would gather from what he had said that he did not object to complaints—not that it would be of the slightest use for him to object ; because the more he objected the more they would complain whenever they had any cause. About two or three years ago, when the Government were taking over the telegraphs, and when, certainly for a time, they were rather in a pickle, a report went the round of the newspapers that he had employed two clerks to read over the journals every day in order to find out the complaints that were made against the department. He did not do that ; he did not waste the time of two clerks, because he knew he could rely upon his bosom friends to send him the first intelligence of anything disagreeable. When his bosom friends, with that sympathising kindness for which they were remarkable, and in an utterly heart-broken manner, did send him disagreeable newspapers, he always looked into the complaints, and endeavoured to remedy the causes of those complaints. He believed that public opinion, expressed either through Parliament or the Press, was the salt which kept the Post Office sweet. He thought it was to the pressure of public opinion and the constant supervision of the public—to the fact that the master's eye was always on the Post Office—that that establishment owed its efficiency, energy, and zeal. He hoped they would never relax that supervision ; and that the public would continue—whether it might be that he was still there, or that his successors had come—to give the Post Office the same stimulus ; and he might add that he hoped they might give his successors that other stimulus of pleasure and kindness which they had given him on the present occasion."

You will observe that these observations have an important bearing on the subject before us, and you will all agree in the advantage of complaints being made against all Government officials whenever they exceed or neglect the duties assigned to them.

The last difficulty that I have to consider, is that of demands upon State administration, as to rates and fares, or for improvements,

or for compensation for personal injury or losses of goods, or for the construction of new lines.

A portion of what I have said under the last heading applies to this heading also, but there are other important points as yet untouched.

One objection which has been advanced against State purchase, is, that there might be a difficulty under State management in continuing the existence of unequal mileage rates; but there are, on the other hand, some railway managers who consider that one advantage of State purchase would be that mileage rates would be to a greater extent equalised. There is no doubt that pressure might be brought to bear, and political influence might be exerted from time to time, from certain localities, and by individuals, with a view to obtaining lower rates, or further facilities, or extra station accommodation, or new branch lines; and some traders might assert their rights to equal rates with other traders under the same or other conditions. But in taking over the railways, the State administration would find certain rates existing, and would only make changes in them as it could see its way clearly towards reductions in each particular case, and with reference to other cases. The tendency would be towards reduction and fixity, and alterations would be made on the recommendations of the district general managers and the district councils to the central council. Any applications to the Railway Minister would naturally be referred by him for report to these bodies and individuals. The same would be the case with regard to the other improvements or facilities referred to. They would all either originate from below or from the districts, or be referred for report; and no minister, having to answer for the conduct of his department, would venture to deal with those matters without recommendations from the proper quarters, and full justification, ready to be produced for what he was doing if he acted in opposition to those recommendations. But, indeed, much of the difficulty in regard to rates and fares would disappear, in consequence of the general reductions which would gradually be made over the whole kingdom. And this would be one of the greatest advantages of State purchase—that the traders and manufacturers of the country would be placed in a better position for competing with their rivals in other countries. Under such conditions, the traffic and commerce of the country would increase to an extent which is at present little imagined. In any case, my own experience of other Government departments, is that they are very well able to refuse requests that are made to them, even in the most simple matters; and the question is rather, not whether a State department would grant too readily what is required or demanded in the way of reductions of rates or improvement or accommodation, but whether they would not be too slow in considering, too long in deciding, and too tardy in affording proper facilities for the extra traffic which would undoubtedly, under proper arrangements, pour in upon them.

As regards the construction of new branch lines, and connecting links, and the improvement of through routes and joint stations, as well as the provision of extra siding and other accommodation, either

to meet existing wants or to provide for increasing business, there would be obvious advantages under a system of State administration. The required funds would be raised at a low rate of interest. Proposals and projects would be considered,—not with reference to conflicting interests, but with regard to what was most for the common good. There would be no fear, in cases of extension, of lowering dividends; waste would be avoided; necessary work would be more readily undertaken. As regards personal injuries or damage to goods, it would, I submit, be only right and proper that fair and reasonable arrangements in that respect should be made. The loss of a limb is more serious than the loss of a letter; and the payment, by way of compensation, for delay or damage in the case of goods, forms a valuable stimulus in tending to ensure punctual and safe delivery.

This great question of State purchase is one which could only, I apprehend, be seriously entertained by any Government upon very strong grounds, and when there was a clearly-entertained and plainly-expressed opinion on the part of the general public that such a measure was not merely desirable but unavoidable for the general well-being of the community. The same feeling which so unfortunately induced Sir Robert Peel, in an earlier stage of railway history, to abandon all idea of Government control and consequent responsibility, still greatly prevails, and very naturally so. The freedom of expression which is properly allowed, and abundantly indulged in, through the public press and otherwise in this country, irritating to mismanaged Government departments, and sometimes annoying to those that are well managed, is certainly calculated to prolong the desire to leave the administration of railways, as well as of undertakings connected with the supply of water and gas, in the hands of joint stock companies. It is always pleasant to interpose buffers in the shape of parish boards, local boards, highway boards, and boards of all other descriptions, including the great Metropolitan Board, as well as gas companies, water companies, and railway companies, between the people and the central government of the country. It is more convenient that the public or their representatives should find fault at meetings, in the press, or in Parliament, with vestries, or boards, or companies, than with ministers or with public departments. The political economy part of the question cannot, of course, be discussed here. But there are disadvantages as well as advantages in the system of shunting responsibility and avoiding duties. There is a limit to the profitable employment of local authorities and of joint stock companies which must yet be more closely worked out and more clearly defined than it has hitherto been. Communism has a bad name, from having been in bad company, but is a good thing when properly employed. Co-operation is, in some cases, only another name for it, and is lawful when competition becomes impossible, as in the case of great railway associations. What we have now to consider is whether, considering the conditions of the problem before us, and looking to the inevitable establishment at no distant date of railway monopoly in this country, that monopoly should ultimately be vested in the State, and employed solely for the public good, or whether it

should ultimately be left in the hands of a gigantic joint-stock association, working for the benefit of its shareholders, with such contingent advantages to the public as it can be made to afford. Whether the public like it or not, with or without the sanction of Parliament, the railway companies will certainly go on combining with one another; and it was the prospective contemplation of these alternatives,—the State, on the one hand, in the possession of its own highways, or, as they have been called, of the Queen's highways, managing them for its own advantage—or an association, or associations, on the other hand, with property valued at upwards of 600,000,000*l.* in England, and 30,000,000*l.* in Ireland, with ramifications, and influence and patronage, through every corner of the land, influencing the elections, controlling (within certain maxima as to rates and fares) directly the communication, and indirectly the trade and manufacture of a country which prospers according as they prosper, and will decay, when, in competition with other countries, they decay,—it was, I say, the contemplation of these alternatives that led me to make the observation before the Committee of Amalgamation of last year which Mr. Ward Hunt was so good as to quote recently in the House of Commons: "*If the State does not manage the railways, the railways will soon manage the State.*"

I end where I began. I do not come here to advocate the purchase of railways by the State. I would fain contrive, or see contrived, some method of averting or controlling the joint stock monopoly which looms before us in the future. But I despair. Even if the means could be devised, could they be passed through Parliament in the face of a combined and determined opposition on the part of the railway interest? The ablest committee that ever took evidence on railway subjects made the attempt last year in vain. They discuss in their exhaustive report all possible means to that end. They point out the "possible ultimate dangers of unlimited combination;" and in recommending the constitution of a tribunal for certain valuable objects, and as an immediate measure, they state plainly that it will not, as it cannot, "have the effect of preventing the growth of railway monopoly." Will any one say how it is to be prevented; how it is to be controlled? However undesirable State purchase may be considered by certain persons, and from various points of view, how is it to be avoided?

The following information and tables (see p. 258, *et seq.*) will be interesting for the purposes of the discussion, and are therefore appended to the foregoing remarks.

Mr. HORATIO LLOYD said—The author of the paper started by saying that this was not a question of principle, but one of expediency. He differed from that observation, because there was involved in this question the all-important principle of a gigantic centralisation, superseding that which the author himself admitted to have been the distinctive characteristic, and in some degree the source of the prosperity and success of this great empire—namely, the association of individual energies. Experience had established the fact that what was required was departmental management, with efficient

central control. If that could be effected, then the notion of a huge centralisation, and the vesting of all this administrative detail in the hands of a Government department, was as unnecessary as it would be mischievous. With all submission to his friend Captain Tyler, that was not a hopeless task. He thought the complaints that had been made of the maladministration of railways were greatly exaggerated, and in repeating them the author of the paper seemed rather to be making a sensational speech before a popular audience than addressing himself to a body of men assembled in the serene atmosphere of a Statistical Society, who required figures, facts, and ratios to guide them. If, for example, the percentage of accidents to the millions of miles run, of passengers conveyed, and of tons of merchandise transported, were given, the proportion would be found to be exceedingly small. The author of the paper adduced instances of shortcomings in the early days of the railway system, most if not all of which had been long ago removed or corrected. There are no proofs that at the present day there was such mismanagement of railways, and such want of due accommodation, and interference with the interests of the public, as to require so revolutionary a measure as this. Unless it could be proved that the system could not be worked satisfactorily without this great change, it was clear that they had no right to make it. Many remedial acts had been passed for the regulation of railways, and it was idle to say that their administration had not improved in an extraordinary degree. Among others there was the Act of 1870, which contained very important provisions, and which, if properly worked, would of itself correct many evils of which complaints, not altogether unreasonable, had been made. Again, Mr. Chichester Fortescue's bill, though, as originally framed, certainly a very crude measure, the production of some one who knew very little about railway work, was capable, with proper amendments, of being made a very useful instrument. That there ought to be an efficient central control he freely admitted, but he expressly denied that there was such laxity of administration, and such selfish disregard of the interests of the public, and such general mismanagement as had been alleged, and which alone could justify a revolutionary measure such as this to remedy it.

Mr. Biddulph Martin said this purchase by the State was merely carrying out the same thing that had been done in the Post Office and telegraphs. He (Mr. Lloyd) said there was not the slightest analogy between these and the railways. Mr. Martin said the Post Office was but a carrier. Now the Post Office was not a carrier in any sense; it collected and transmitted to the railways, and they carried. It was a collecting and distributing machine, nothing more. The telegraphs were the same,—they were merely an expansion of the postal system which the State had rightly undertaken long before. It was a totally different thing that the State should undertake the entire system of railways. They had been constructed and hitherto maintained without the aid of the State, by the energy and enterprise of individuals, and could well continue to stand alone. The notion of any Government department managing and administering that vast system, involving such a multitude of operations and such infinity of detail, was one which

the mind could not take in. Nothing was so misleading as false analogies, nothing so dangerous as precedents that did not apply. There was no real precedent for such a scheme as this, and no analogy to support it. Even supposing that there had been mismanagement and maladministration, and that the public had not been as well served as it might have been, was there, he asked, any organisation ever known into which human agency entered as an element that was perfect? Could the State make signalmen more wide-awake? Could the State prevent fogs? Why the same people would have to do the same thing, and the same things would occur. Was Mr. Chichester Fortescue so omnipotent that he could control the elements, or guide the wills and direct the energies of an army (for such it was) of 200,000 individuals? They must not expect perfection, they had to do the best they could with the materials at hand; and he repeated that, taking all things into consideration, and having regard to the vastness of the operation performed, the railway system was as little imperfect as any undertaking of such a magnitude could be fairly expected to be.

As to the financial part of the matter he could say that, when they came to the compensation to be paid for those railways, their 600,000,000*l.* would soon grow into a much larger sum. In 1871 552,000,000*l.* represented the capital of the railways, and by this time it was nearly 600,000,000*l.* Captain Tyler suggested the buying of the railways one by one. This was impossible. The principle laid down in the purchase of the telegraphs was, that the moment one was purchased every other had the right to demand to be purchased also. And why? For the very simple reason, that when State action came to interfere with the independent action of the others it was impossible that such a state of things could continue. If the State bought one railway it must buy all, and that at once or nearly so. Suppose, for example, the State purchased the London and North Western Railway by itself, were they to control the Midland and the Lancashire and Yorkshire Railway? How were arrangements to be made between the State, as the owner of one or more of the railways, and the companies which remained independent? That, he repeated, was impossible.

CAPTAIN TYLER said it was what they had done in Belgium.

Mr. LLOYD said that Belgium could not be compared with the United Kingdom, and their system of railways was a trifle compared to ours. No other country in Europe had ventured to do this, not even France, where theory and practice of centralisation had been carried to the furthest point. His opinion was that they would not be able to buy the railways in the United Kingdom, which could not be bought under 800,000,000*l.*, and not improbably they would cost even a larger sum. The principle laid down by the Telegraph Act of 1868 was, that the net income of the Company was to be capitalised at twenty years' purchase. Now the fact was, that the income from railways had nearly doubled in ten years. The Telegraph Act also provided for taking the average of the increment of three years as the initial figure which should be supposed to represent the future yearly increment, and then that that increment should be taken at twenty years' purchase beyond the

twenty years given upon the actual receipts before. In addition to this there was a further capitalisation of the future increments of profit. The Chatham and Dover Railway had been actually compensated upon that principle. The actual result would be, that thirty years' purchase would be claimed upon the last ascertained nett receipts for a year, so that over 800 millions would have to be paid to begin with. Then there were the costs, no trifling matter, upon which he could speak with some experience. Another thing which had not been taken into account, was the existence of competitive channels of communication. The theory of those who advocated State purchase was, that the rates and fares would be lowered; but if they lowered their rates for land carriage by railway to such a point as to destroy the profits of the canal proprietors, they would have to buy up the canals also, for to destroy them without compensation would be confiscation, a thing of which this country had never yet been guilty. Again, the capital account of the railways could not be closed so that the total amount to be paid by the State would soon be swoln to an enormous figure.

Coming next to the question of administration, if it was really meant that the State was to work the whole railway system of the United Kingdom, the magnitude of the operation was absolutely appalling. It would require a new Government altogether; not merely a Secretary of State for the railway department, but such a number of boards, with their different departments, such officialism and such red tapeism as could hardly be conceived. Again, the plan, even if practicable, would be most inexpedient on account of the enormous power it would give to the Government of the day. It was all very well to say patronage was done away with, but the notion that any Government which had the means of disposing of 200,000 places had not an amount of patronage most dangerous, was altogether ridiculous. Mr. Martin said the ballot would prevent any improper political action. Mr. Martin, if he believed that, had greater faith in the efficacy of the ballot than he had. The employé would look to his employer, and 200,000 or 300,000 men employed by the State would look to those who were the means of giving them their bread. On the whole, these and many other considerations satisfied him that, granting there might be some shortcomings in the present administration of the railway system, it was "better to bear the ills they had than to fly to others which they knew not of." He believed, moreover, that improvement in the management of railways and the conduct of traffic could and would go on improving. The proper thing, as he had said, was departmental and personal administration, with efficient central control. On the whole, he thought the proposal a mere utopian idea, which never could and never would be realised, but which, if it were realised, would be found to be no Utopia at all.

Mr. EDWIN CHADWICK, C.B., said—He had listened with great admiration to the speech of his learned friend Mr. Lloyd, as the speech of a magnificent "how not to do it." He must submit, as a predominant principle, that the fact of a thing being done was evidence of its possibility; and, notwithstanding Mr. Lloyd's adroit

summary dismissal of the case of Belgium, and other continental systems of railway administration by the State, he must contend that they were full, and in many respects complete, as analogies for ourselves. State administrations of railway had long been in action in Germany as well as in Belgium, side by side with company management, and the people were so well satisfied with State management that there was a general public movement, not for the absorption of the railways by the companies, but, on the contrary, for their absorption by the State ; and such would no doubt be, as apprehended, the result of a similar trial here. They must bear in mind the difference, in organic administrative principle, between conducting a system of communication on payment simply for the service, and conducting it as a monopoly for a trading profit on the necessities of the people—a difference in principle that governed the whole question. The postal system in this country was originally a trading enterprise, in the hands of private adventurers, and it was a long time before it was taken up as a public service. Very much what we might imagine it would be now if communication by letter were conducted in some hundred independent districts by trading companies, as private monopolies, for the sake of a trading profit, as communication by rail was now ; and we should hear the like platitudes from the directorates about the excellence of private enterprise. But there were large economies of State control, overlooked by its opponents —namely, the economy of unity of management and the economy of State security. He had shown from the evidence of railway managers that the economy of unity of management was to be set down at 20 per cent. of the working expenses ; and this not from the expenses of multiplied directorates, or even law expenses, but from making two trucks do the work of three, and the avoidance of such manifest waste as having three sets of carriages running one-third full from the same place to the same place at the same time. Then, there was the gain to be derived from taking up all the bond debts on the public security, which would be a gain of from one to one and a half per cent. on them all. These economies he had contended would, in themselves, construct a very large fund, divisible between the shareholders and the public, allowing to the shareholders increased dividends and to the public improved accommodation. Another great part of the question had been overlooked by the opponents of the public control, namely, the power of expansion under a public system that was not possessed by the trading companies. If they would examine the large gaps that were displayed on the maps between the existing railway trunk lines, they would credit the assertion that there was probably as great an extent of cheap branch lines required for economy of transit as there was now of main lines in action. Branch extensions could not be made by the trading companies except at a profit on disproportionately large charges. But on a public footing they might be made at the bare cost of the service. On the trading companies' footing they were suckers ; on the public footing it might be shown they would become feeders.

Sir James Anderson, in his paper on ocean telegraphs, had ably shown what could be done by a Government, and what could not be

done by a trading company in reductions of fares and in extensions. As to the economy derivable from unity, the railway directorates, after having for a long time disregarded it, at last they had begun to think of it, and having started on the principle of open competition, they began to seek the economy of close and large monopoly for their own profit at the expense of the public by large amalgamations. They talked of four great amalgamations as eligible to comprehend the whole country. Now, was it to be allowed that that approach to unity which was attempted to be made for the companies, passed any public administrative capacity to make them for the public? Or if they were made under the rule of such able practical men like Mr. Allport and Mr. Eboral, might not their services be transferred under unity and public urgency? If we have not administrative capacity for such a task, send to Belgium, send to Germany for it. But he entertained a confident opinion that the task was not so difficult as had been that of reorganising 16,000 parishes into 6,000 unions, however imperfectly that task had been performed, which had been pronounced to be impossible by persons who put forward dogmatically their crude conceptions of administration as final facts. The opposition to the proposal was made up of assertions of imagined difficulties, the answers to which involved long expositions of fallacies, and false economical and administrative principles, which there was not time to give. But let those they had just heard be put on paper, and if called for they would have their answer. Thus it was assumed, for example, that all management must of necessity be direct State management, with no improved securities, and nothing by contract management. As a present expedient, the substitution of an undivided and responsible attention for a distracted and irresponsible and transient attention, of a real board for what had recently been legally pronounced to be a sham board, might, he admitted, afford some better protection for the present to the shareholders and the public.

Mr. BENJAMIN HOUGHTON said—He looked at the subject from an engineer's point of view. An argument very commonly produced by all the advocates of the expropriation of the railways was, that one great source of saving would be that the Government would be able to borrow money at a lower rate than the railway companies. The reason why the English Government was able to borrow money at such a very low rate of interest at present was because it had generally practised a virtuous abstention as to interference in all matters relating to commerce and trade; but if it took upon itself to borrow one thousand millions, which was the minimum sum it would have to pay for the railways, it might find itself unable to procure the money upon the same terms as it did at present. Then, supposing they cost a thousand millions, how was the interest to be paid? The present railway revenue was about 50,000,000*l.*, and, deducting 50 per cent. for working expenses, it left 25,000,000*l.* for dividends, or 2½ per cent. on the total capital. The three reasons why the public had become so enamoured of State management were to be found in the successful management by the Government of the Post Office and of the telegraphs, and in the

low fares charged on the Belgian railways. There were about 1,800 miles of railway in Belgium, and only one-third of this mileage was in the hands of the State. The State, no doubt, did its work well, but, then, its lines occupied the best parts of the country, and possessed the cream of the traffic. It was unfair to compare the working of an English line with a Belgian line. The land upon which the Belgian railway was placed was of less value than a similar quantity of land in England; the whole cost of making the railway was less, and the cost of management was less; and, therefore, they ought to be able to carry at a lower rate than our English companies could do. The word monopoly had been very freely taken up by the advocates of expropriation. He maintained that the railway system was no monopoly; on the contrary, from his experience, he believed there was a burning competition existing between the principal railway companies, if not in rates, yet in the accommodation given to the public. After pointing out the disastrous results that would arise from a general strike amongst the railway employés, supposing all the railways to be under one control, he said he believed that the genius of the English people was opposed to State management, and that the principle instilled into them by the great Corn Law League Reformers, and which was lately repeated by Mr. Gladstone, was one which they ought to bear in mind, namely, that centralisation ought to be avoided in England as much as possible; and that the work of the country should be done by the people themselves, instead of by dictators appointed by the Government. Admitting that something was wanted, he was in favour of all the railways amalgamating into four or five large systems, each with its own district.

Sir WILLIAM WRIGHT said—If amalgamations were good *per se* in one part of the country, why should not they be good all over the country, and why should not the people of the country take the railways into their own hands, and employ those efficient men who had already managed them so admirably? He instanced the case of the amalgamation of the North-Eastern system, which originally consisted of thirty-seven different lines of railway. The North-Eastern consols were too well known in every financial market to be considered in any other sense than as a most valuable, safe, and important investment, and they had only to follow the example of the great financial operation involved in the creation of those consols for the purpose of carrying out the still greater financial operation. He regretted that the Railway Committee did not grapple with this question. No doubt there were difficulties, but for his part he could not see a lion in the way; on the contrary, there was a perfectly even and smooth path to be followed. In the North-Eastern system the result had been advantageous in every way. He was therefore an advocate for railways being amalgamated without delay, for whether they were taken by the State or not the question of amalgamation must go on.

Mr. NEWMARCH said—He had been very much amused by the theories started by gentlemen on the other side. Mr. Edwin Chadwick

described the Board of Trade as a sham board ; but that was a Government board, and was very much the sort of control recommended to them now in many quarters. Sir W. Wright wanted the " people" to manage the railways, he supposed by meetings in Hyde Park under Mr. Odger. Captain Tyler proposed the homœopathic application of the system of absorption, but Mr. Lloyd gave a decisive answer to that suggestion. The enormous amount of investment represented by the railways must be dealt with on principles of property, not on principles of abstraction or fancy. Here were hundreds and thousands of people who, during the last forty years, had been gradually building up these systems of railway, by submitting to long periods of probation without dividends, and to everything incidental to supporting the most enormous industry which modern times had seen ; and now, when the time had come that all this expenditure and sacrifice was beginning to bear some fruit, it was not for a Government, such as they understood the Government of this country to be, to turn round and endeavour to drive a hard bargain with the owners of those millions of capital and of this vast system of administration. They must dismiss from their minds, as an utter delusion and a snare, any such suggestion as a sum of 600,000,000*l.*, for they could not approach the question. Taking into account the example set by the telegraphs, without assuming that the amount of capital actually to be found in one form or the other, if this transaction ever came to a point of completion would be far nearer 1,000,000,000*l.* than any other sum. That being so, the whole question assumed a different aspect, and financially was overwhelming. Taking the cost at 1,000,000,000*l.*. the thing would not pay, and as a taxpayer he must object to it. Interest must be found on this vast capital. The idea abroad was that there was a monopoly on the side of the railways which prevented them from giving the proper facilities to the public. He must deny that *in toto*, for he could assert that the whole history of railway administration had been one continued course of concession by the companies to the public convenience and demands. The recent concessions as to third-class travelling were not made by railway managers on any grounds of sentiment, but they were forced into it by the economical necessities of the case. These gentlemen, wisely or unwisely, had spent at least 600,000,000*l.* of capital in providing certain kinds of communication ; and a return upon that capital had to be extracted out of a population of 30,000,000. It unfortunately happened that only a small part of these 30,000,000 are people able to travel by express trains in first, or even second, class carriages, and therefore the railways, by the necessity of the circumstances under which they found themselves, had been compelled to " cap the multitude," to lay themselves out by small charges and increased accommodation to attract custom from the lowest parts of the population. Whether the railways were left as they were, or were encouraged to amalgamate, they might depend upon it that the public would, in the end, obtain all the facilities which they could expect to get from State acquisition. The reason why the English system of railways was, as a whole, the best system of railways on the face of the earth, was

because it was under private management, and because its administration had been laid on the shoulders of men who had to meet a formidable responsibility. He concluded by expressing the belief that it would be a fatal day for England when they sacrificed the spirit of liberty to an advantage which was purely phantasmagoric, and to a financial scheme which had no basis in fact.

The discussion was then again adjourned.

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*On Tuesday, the 1st April,*

Mr. ALLPORT (manager of the Midland Railway) re-opened the debate. He said he agreed with Captain Tyler that this was one of the most important subjects that could be discussed in any society of Englishmen. And, so far from not being biased, he had the deepest personal interest in it, because, first of all, he was a large railway shareholder, and Government purchase would enhance the value of his stock; and, secondly, as one of the oldest and leading officers in the kingdom, he might fairly look forward to the pension granted to officers in a Government service, but not usually awarded by railway companies.

The PRESIDENT.—Does not the London and North-Western pension its servants?

Mr. ALLPORT said no, but they had a superannuation fund established a few years ago. As, however, the superannuation fund on the Midland was established some years after he was ineligible from age to join, he should derive no benefit from that. But he felt very deeply on this subject, as an Englishman, in regard to the future prosperity and well-being of the country, and he most unhesitatingly stated that having had practical experience in the working of railways for many years, he believed it would be a great injury if, unfortunately, the Government became possessed of all the means of communication of the country. The main points against purchase by the State had been so ably discussed by Mr. Horatio Lloyd, and the financial question had been so debated by Mr. Newmarch, that he was saved a great deal of trouble on those points; but he would like briefly to allude to one or two points in Mr. Martin's paper, which were either incorrectly stated or were fallacious. With all respect to Mr. Martin, he might stand on the highest pinnacle as a banker, but, judging from his paper, he knew little or nothing about railway management. Mr. Martin stated in his paper that the amalgamation of the North-Eastern, Great Northern, and Midland lines would have a great effect in closing the various ports on the north-east coast, and discouraging the carriage of coal by sea; but the North-Eastern already possessed all the ports between the Humber and the Tweed, and no such result followed. Then Mr. Martin spoke of the charges for coal from the Wigan district to Widnes, and complained that the carriage of coal for export was 1s. 2d. a ton, whereas for coal for consumption at Widnes it was 2s. 4d. a ton. But, first of all, he (Mr. Allport) contended the 2s. 4d. was

not an excessive rate for the distance, as the company had to find wharves and stations, &c., for the land sale of coal, whereas the export rate was put low expressly for the purpose of encouraging traffic for exportation. Therefore, why that should be a charge against the railway company he could not understand. Then the next point Mr. Martin brought forward was the accidents, and he (Mr. Allport) was sorry to find a person of the experience of Mr. Edwin Chadwick very loud in his complaints on this head, and was afraid it would be useless to endeavour to convince him he was wrong. He rather wished to dilate upon this. He was quite sure public opinion had been greatly influenced on this subject by the reports of the Government inspectors upon accidents. During his thirty-five years' connection with railways, and thirty-two years as manager, he never knew a Government inspector make a report in which he did not in some manner try to bring in the railway company as negligent in some way or other. But what did accidents mean? Would any one stand up and say he had never in his life committed some mistake or some negligence which he deeply deplored after the event? Of course, on a railway they had human beings to deal with, and men would neglect rules and regulations, and would run risks which, after the event, they would deeply deplore if they did not, as was often the case, pay the penalty with their own lives. The table presented to the Society showed that, in 1871, 1,042 males and 84 females unfortunately lost their lives on railways. No one could deplore that more than the persons engaged on the railways. But let them dissect that number. First of all, there were "753 run over on the line." Was that the fault of the companies? Certainly not. Next, "fell from carriages or engines, 46." Could the railway companies be responsible for that? No. Then, "carriages off the rails, &c., 13." He did not know what that meant, but perhaps the 13 was due to the "&c.," therefore he passed that over. Then there was "explosion of boiler, 1;" and "machinery of locomotive engines, 1;" and "crushed, 181." What did "crushed" mean? Why, that men usually became careless in their work, and got between the carriages or wagons, and became crushed; but that was not the fault of the companies, but arose from the negligence of the men themselves. The next item was, "fall of heavy substances." What could that have to do with the railway companies? Then, "manner not stated, 78." It was a great pity that the compiler of the table did not state the cause of death in those cases. Then he came to the most important item, "collisions, 30." Admitting that these thirty lost their lives by collisions, it must be remembered that collisions occurred from a variety of causes. Men became so accustomed to their work, and so over-confident, that in nine cases out of ten they became negligent, and this negligence led to accidents. The Staplehurst accident was an example. It occurred on a level line, the platelayers having taken out a rail, and the inspector of the permanent way having omitted to give notice to the superintendent of the line that it was being done. But what he wanted to know was, whether Government service made men more careful or less careful? His experience was that if they put a man in a position where he felt himself secure,

as he would be in Government service, he became careless. Again, he contended that the system of Board of Trade inspecting office is in advising this thing and that to be done tended to cause a good many accidents. If they told a driver of a train that along the road there were a number of men to take care of him, he would be less careful of himself and his train, and would not take so much care to look out for himself. He could name many accidents which arose from that cause. The block system had been much advocated, and the companies had been blamed by the Board of Trade and by the press for not adopting it generally. But with the block system accidents would occur, and he gave several instances of it before Lord Buckhurst's Committee, because men would naturally take less care at all times with the block system than they would without it. Again, he had given the committee instances where the absence of the interlocking system had prevented accidents, and he could prove the cases to any one. It was not from economy that the companies declined to adopt precautions or means of safety. On the contrary, whenever the companies were fairly satisfied that any system did conduce to safety they were the first to adopt it, without any interference on the part of the Board of Trade inspectors. It did not require an officer of the Board of Trade to tell a practical railway man what his business was. If he (Mr. Allport) did not know what the requirements of a railway were, the directors of the Midland Railway ought to get rid of him. He contended that it was not a question of economy on the part of the railways. He showed before Lord Buckhurst's Committee that the cost of the block and interlocking systems if adopted on the entire Midland Railway would be about 600,000*l.*, and they were now spending on one of those systems 40,000*l.* a-year, and on the other 20,000*l.*; and the annual cost of wages and materials alone would be 130,000*l.*, and inasmuch as the working expenses were 50 per cent., that sum, together with interest upon the outlay, represented 260,000*l.* of annual gross earnings, or 6,000*l.* a-week of receipts, to cover the expense of the block and interlocking systems. The writer of the paper and Mr. Edwin Chadwick seem to know little of the anxiety of railway directors and officers to prevent accidents. On whom did these accidents fall most heavily? Would the directors willingly run the risk of these accidents, paying compensation in the way they were obliged to, to the extent of thousands a-year? Was there not a loss of reputation attending accidents, and a loss of traffic besides? And yet they were told that railway companies acted on a false spirit of economy, and Mr. Edwin Chadwick said that the companies sought profit rather than safety.

Mr. RAWLINSON thought Mr. Allport meant Mr. Chadwick, M.P., and not Mr. Edwin Chadwick.

Mr. ALLPORT said he had made no mistake, but he was quite aware that Mr. Chadwick, M.P., held as violent opinions on the point as Mr. Edwin Chadwick. Then there had been a comparison made between railways and the Post Office and the electric telegraphs; but would they for a moment compare the two systems with the railways. To the Post Office the public delivered their letters, and they were sorted and stamped by boys and young

people, and sent to the railways to be carried, so that the Post Office work was really the least part of the duty of letter-carrying. Then, again, in the case of the telegraph offices, the public took their messages to the offices, and the Post Office only had to send them off and deliver them, this work being done by young persons both male and female. But was that to be compared to the railway service, or to what went on at any of the large goods stations in London, or the large towns where innumerable packages of every description had to be classed, weighed, and invoiced, and sent off at once to all parts of the kingdom, and delivered the next morning in the town to which they were destined at the same time as the Post Office letters were delivered? The two services did not, therefore, bear a moment's comparison. Then Mr. Martin complained, in his paper, of amalgamation, and said it was an immense monopoly and a crying evil; but then he went on to say the amalgamation in the case of the North-Eastern had led to what? why, reduced fares to the lowest amount, and to increased dividends. Was it wrong in one case, therefore, and right in another? But it was not a fact that the North-Eastern fares were the lowest in the kingdom. The North-Eastern fares were exceedingly high at one time, and the company reduced the fares to the standard of the other great companies; but long before the North-Eastern reduced their fares the Midland had reduced theirs, although not compelled to do so, to precisely the same standard as the North-Eastern, so that it did not require amalgamation to bring that about. There was another curious paragraph in Mr. Martin's paper, in which he said that the points of junction were a kind of "no man's land." What did that mean? Why, if there was one part of a railway which received greater attention and care and inspection than another, it was the junctions, which Mr. Martin called "no man's land." He (Mr. Allport) confessed he did not understand what was meant. Now, a great deal had been said about monopoly, and what the Government would do in case the railways were in their hands—that they would develop trade, and he (Mr. Allport) did not know how many great blessings the Government would confer. In regard to monopoly, if there was any system of trade in the world more subject to competition than another it was the railway interest. The railways had increased the public accommodation to an enormous extent, and also the means of communication from town to town, and had done more for the benefit of the country than any other industry with which he was acquainted. As to developing the resources of the country, it would be enough proof to show what the exports of the country had been since 1832. The value of the exports of British manufactures in 1832 was 36,400,000*l.*, and that was the year when railways might be said to be fairly started in this country. From 1801 to 1832 the exports fell off to the extent of three or four millions sterling, and there was a stagnation of the commerce of the country, many people, both Englishmen and foreigners, stating that England had passed its best days; but the railways, fortunately, came in to assist in developing the resources of the country, and the result was, that, in 1872, the export of British manufactures amounted to 260,000,000*l.* He remembered that, in 1848,

when the exports reached the sum of 52,000,000*l.*, there was a general cry on the part of the press that it was a speculative trade and could not be supported ; but it was not so. Was not that progress due to the railways ? He was old enough to remember what the charges for carriage were before the introduction of railways, and he ventured to say that the reduction in carriage by the railways, as compared with the former charges and quantities carried, had effected a saving to the country of an amount equal to more than double the entire gross receipts of all the railways of the kingdom, or more than 100 millions sterling. Would anyone, therefore, say that the railways had not done their duty to the country ? What the companies had done for themselves was to earn an average dividend of less than 4 per cent. Had not the railways also developed the various districts ? Take Derbyshire and Nottinghamshire. There was, in his recollection, a time when there was hardly a colliery in the district. What was the case now ? That coalfield was covered with collieries. Twenty years ago the supply of coal to London was almost entirely by sea, and prices varied from 30*s.* to 40*s.* per ton, until the railways brought up the coal from the Midland districts, and now the railway-borne coal to London was two-thirds of the total supply. The present prices of coal he disregarded in this argument, as they were exceptional, and he believed they could not last long. What had been the result of the railway carriage of coal to the public ? The reduction in the rate of the conveyance of coal to London in the last fifteen or twenty years was equivalent to nearly the total value of the coals themselves. Twelve months ago people were paying for coals in London less than they paid for the carriage of the coals alone before the railways came into operation. What had caused the enormous development in the iron trade but the railways ? If the railways had not brought the iron ore to South Staffordshire that district would have been closed by this time as an iron manufacturing district. The railways brought the iron ore into Scotland, Cleveland, and Wales, and other distant parts, at rates less than one-fourth of what the canal had before charged. Now, in regard to the Government management of railways, and the question of patronage, was it to be considered nothing, and did it excite no alarm, when they were told that the railway servants numbered something like 300,000 men, most of whom were intelligent men, and exercised some little influence in their respective districts ? Would not the political position of many towns be affected by the influence of the railway servants ? In Derby, for instance, with a population of between 40,000 and 50,000, the servants of the Midland Company and their families numbered 12,000 ; would they not have some political influence in the town of Derby ? Would it be nothing to have 300,000 men under any Government ? They could not be deprived of their political rights like soldiers and sailors, and therefore in any town where there was a large number of railway servants they might be naturally disposed to vote for the Government candidate. There was another extraordinary statement in the paper as to the advantage of adopting one payment for passengers and goods. He (Mr. Allport) did not know what was meant by that, but he sup-

posed it meant a uniform payment, because if not it meant nothing. Now the Railway Clearing House was so perfect that there was no difficulty in receiving one payment in London to John o'Groats or the Land's End ; but did the author mean there would be a uniform fare like the penny postage ? Then what did he mean ?

MR. MARTIN said he meant one payment from any one place in England to another.

MR. ALLPORT said that had been in operation for a long time from one country town to another, and any man could also book from London to any part of England, Scotland, Ireland, or Wales, and from all the large towns he could do the same. It was quite true passengers could not book from every place to every other place, the enormous number of tickets required to do so would be so prodigious that it would be impossible to keep the accounts or provide offices to put the tickets in. Even on the Midland line they were obliged to divide it for booking purposes, so that the passengers to certain places might break the journey. It was a simple calculation to find out how many tickets would be wanted in each booking office if they booked from every place to every place, and they would amount to many millions. In the Midland Railway alone, they had nearly four millions of rates, and if they multiplied those by the other systems, see what they would amount to ? How was the Government to deal with all that ? He failed to see it ; and should look with alarm at the Government engaging in so great a commercial transaction. Were they justified in believing that the Government could do it ? Was the Government management of their own affairs so superior and economical as to justify the nation in putting the whole carrying of the country into their hands ? Everybody knew that it would cost more in the hands of the Government—he did not blame the Government—but that was the inevitable state of things where there was so much circumlocution. Look at the vast supplies for the railways which must be bought. What deep interest would the sellers take in the Government ? Was that a state of things that would tend to economy ? Certainly not. Then he would like the opportunity of going through the Government establishments, and see if he could not write out reports against them by the dozen. What would have been said of a railway company if it had sent out a ship like the "Megæra," or built for the Holyhead and Dublin passage a ship like the "Captain ?" What would a railway inspector have said if a railway company had built a steamer or a bridge that went down like the "Captain ?" He would undertake to produce for every instance of mismanagement on the railways its counterpart in the Government establishments. Now, as to the price of the railways, the author put the capital at 553,000,000*l.*, but owing to the capital raised since 1871 that figure must be increased to 700,000,000*l.* or 750,000,000*l.* But Mr. Lloyd had put the figure at 800,000,000*l.*, and Mr. Newmarch at 1,000,000,000*l.*, but he (Mr. Allport) did not believe the railways could be bought for even 1,000,000,000*l.*, but if they could the Government could not stop there. What was to become of the canals ? Would the canal proprietors be satisfied with the Government competition ? No ; the canals must be bought too. Then

what was to become of the docks? Many canal proprietors and railways owned docks. Would the dock proprietors like to see the railway docks in the hands of the Government, and themselves left out in the cold? The docks must be bought too. Some of the railways also had fine fleets, which must also be bought. Then, again, the tramways must be purchased, and also the coasting steamers. It might be very well to laugh, but he was practically acquainted with these things, and he knew that the most severe competition took place between the railways and the coasting steamers to and from the ports on the north-east coast and other ports also, and the steamboat proprietors would not be satisfied to see the railways and canals in the hands of the Government, and themselves left out. The Government must therefore buy all the steamers, and use them or cease to use them as coasters as they pleased. Then there was the question of cartage of goods in the various towns, for which the railways employed a large number of horses. The Midland Company alone had at the present time about 2,000 horses used for this purpose. What had all the other companies? The Government must take all these, and have the whole carrying system in its hands; whether by rail, or by steamer, or by tramway, or by the cartage system in the large towns. The very rumour that the Government intended to do this would send up the price of railway stock. This was so in the case of the telegraphs. Everyone knew that Government had to pay 40 or 50 per cent. more than the telegraphs were worth. What did the Government do in the case of the telegraphs? They gave thirty years' purchase on the enhanced price of a property which the sellers had not in their possession. In the case of the Midland Company, for instance, the greater part of the wires and instruments belonged to the Midland Company, which had an agreement with the Electric Telegraph Company, expiring about the end of 1873 or the beginning of 1874. The Government gave the Telegraph Company thirty years' purchase, but the Government had yet to buy what belonged to the Midland Company, and an arbitration as to the amount to be paid to the Midland Company was now pending. He should have thought also that the Government would have taken care first of all to make agreements with the railway companies to carry their wires along the railways, as that was undoubtedly the most economical plan, and he was very much surprised to find that the Government was actually carrying the telegraphs in many places along the turnpike roads. That was not what private companies would have done. Then what was done recently in Ireland? As soon as it was reported that Captain Tyler was investigating the matter with a view to the Government purchase of the Irish railways, there was an unprecedented rise in the Irish railway stock. So that would be in England under similar circumstances, and he ventured to say one thousand millions would not purchase the English railways. What has raised this country to its present position? The principle of self-government. The people did not want the Government to take care of them. With a system of centralisation, and the Government taking charge of this, that, and the other, we should soon become un-English; and he hoped the nation would never suffer the

Government to take possession of any commercial undertaking whatever. The taking of the telegraphs he believed to be an unwise measure. Captain Tyler had referred to the Government of India, but was the Government control of the Indian railways to be brought forward and compared with the management of the English railways? Was not the question of the break of gauge in India well known to every one? (The CHAIRMAN intimated that Mr. Allport need not elaborate this part of his argument, as the facts were well known.) He could only suppose what the Government management of the railways in England would be by comparing it with the management of the Government in India, but he would not go on if the point was admitted. Well, if they referred to Belgium, every one knew the railway management there was most defective. But Captain Tyler had referred to India, and if the Indian management was to be taken as a sample of Government management of railways in England, he (Mr. Allport) said—Heaven keep us from Government management in this country!

The CHAIRMAN asked whether it was not the Midland Company which set the example of third-class by all trains, and said it would be interesting if Mr. Allport could state the result.

Mr. ALLPORT said the Midland Company set the example about twelve months ago, and the result had so far been more successful than he anticipated. No doubt it had reduced the second-class passengers very considerably, and it had also reduced the first-class to a certain extent, because they had gone partially into the second-class, but the great fact was that the third-class had been increased to a very large extent, but the receipts, he was sorry to say, had not increased in the same proportion; on the contrary, the profits were pretty stationary. The Midland Company carried an excess in numbers of about one million passengers, but the increased receipts were small compared with the increased numbers. Some gentleman remarked that Government would be able to reduce the fares about two-thirds. Well, the total receipts from passengers in 1871 was eighteen millions sterling, for which the companies carried about 360 or 370 millions of passengers, and eighteen millions sterling divided by the whole population represented about 10s. per head. In the same way the goods and minerals would come out at 15s. per head of the population. So that in neither case would there be any great room for the enormous reduction which had been spoken of. Coals were being carried to London at about halfpenny per ton per mile, and there was no room for much reduction there, which would only increase the working expenses and reduce the net profits. It was a fallacy to suppose that by reducing fares and rates the net profits could be increased. Nothing of the kind.

The CHAIRMAN intimated that Mr. Allport had exceeded the time allotted to him, and that other gentlemen desired to speak.

Mr. ALLPORT said he would sit down, but he desired to inform the press that he had not said one-half of what he could say on this great question.

Mr. HAMMOND CHUBB said—That the question must be regarded under two heads: there was its financial aspect, and what must be

called its political aspect. With the first only he proposed to deal. Before, however, speaking of railways, he desired to correct some false impressions which prevailed in regard to the purchase of telegraphs by the State. This operation was usually held up as a warning; but was it so? In the first place, the purchase of telegraphs would differ from that of the railways in this, that they were bought and paid for by cash, which went directly into the pockets of the shareholders; there was no offer of any other stock in lieu of that which they were asked to give up; and there was thrown on those who were probably content with their holdings in a rapidly improving property, the responsibility, the labour, and no doubt in many cases the loss of finding other investments. In the case of the railways the magnitude of the operation would render such a course impossible, for, could the money be raised with which to purchase; the payment of this sum to the shareholders would necessitate such a demand for some stock into which to re-invest, that it could only be met by the stock that the Government would have to raise to pay off the railways. The transaction, therefore, would necessarily take the form of a transfer rather than of a purchase. As regarded the bargain which the State had made in purchasing the telegraphs, he was able, on good authority, to give the meeting some facts. Up to the end of last year the purchase of the telegraphs had cost 6,678,000*l.* The interest on this sum, at  $3\frac{1}{2}$  per cent., amounted to 217,000*l.* per annum. But the income of the telegraph companies, which they divided in profits among their shareholders, was over 350,000*l.*; therefore, for 217,000*l.* a-year, the Government had purchased an annual income of 350,000*l.* The principle on which to calculate the cost of the purchase of the railways was not, what was the gross sum necessary to buy them, but would it involve a greater sum in the shape of interest to the State than the companies were now distributing in dividends? This inquiry was materially aided by the subdivision of railway capital into three classes—debenture stock, preference stock, and ordinary stock. The proportions were, in 1871, roughly speaking, as follows:—

	Capital.	Rate.	Interest.
	£	Per cent.	£
Debenture bonds and stock .....	150,000,000	4	6,000,000
Preference stock .....	173,000,000	5	8,650,000
			—
Ordinary stock .....	323,000,000		14,650,000
	230,000,000	4.71	10,850,000
			—
	553,000,000		25,500,000

Taking the debenture stockholder first, what was his position? For 100*l.* stock he received 4*l.* a-year. The State would have to maintain this annuity, but they would do no more. Were they to convert his 4 per cent. stock into a 3 per cent. stock, he would be credited with 133*l.* 6*s.* 8*d.*, which he could probably sell for 120*l.*,

and thus obtain a bonus of nearly 20 per cent.; but this would entail no loss to the State.

The preference stock was to a great extent similar to the debenture stock, and with the present holders of preference stock the same system should be pursued as with debenture holders. They should be assured of receiving their present dividends, but as preference stock does not enjoy such high credit in the market as debenture stock, the bonus to the holder would be larger. Out of a total capital of 553,000,000*l.* the debentures and preference stocks absorbed 323,000,000*l.*, or 14,650,000*l.* interest out of 25,500,000*l.* The ordinary stock of 230,000,000*l.* thus had 10,850,000*l.* interest, or very nearly 5 per cent. At least one-half of the railway capital of the kingdom would fall within the scope of the Act of 1844,\* but taking only half of 230,000,000*l.*, or 115,000,000*l.*, and supposing it to yield 5 per cent., that would require 5,750,000*l.* out of the 10,850,000*l.*, and if the money necessary to purchase that at twenty-five years' purchase were raised at 3 per cent. the Government would be called upon to pay little more than 4,250,000*l.* annually instead of the 5,500,000*l.*, which the companies at present divided for that portion of their stock. This would leave a margin of nearly 7,000,000*l.* as the interest upon the remaining 115,000,000*l.*, or at the rate of more than 6 per cent.; and if anything like the good bargain which was made in the case of the telegraphs could be effected in the case of the railways, there is little doubt that the cost for interest on the "ordinary" stock also would not exceed that now distributed in the shape of dividends upon it. If these points were conceded, it would appear that the outgoing from the State, by way of interest, would not exceed the amount now paid by the companies in the way of dividends.

CAPTAIN DOUGLAS GALTON, C.B., F.R.S., said, that—According to the Act of Parliament, the purchase of the railways at twenty-five years' purchase of the receipts, could only be made provided the companies had for three years been paying 10 per cent. If they were not in that position, the purchase would have to be settled by arbitration, taking into account prospective values; and that would make a material difference in Mr. Chubb's calculations. The question of State purchase arises from apprehension lest the companies should oppress the public. Those who advocated the State purchase might be divided into two categories, the people who

\* The clause in the Act of 1844 which secures to the State the right to purchase such railways as may be made under Acts granted subsequently to that date, permits arbitration to be resorted to in the case of railways which have not paid 10 per cent. in dividends, if the companies think the terms of the Act inadequate, and desire this course to be taken. This power was not referred to by the speaker for the following reasons: Firstly, the figures taken above were very favourable for the companies, being the latest year's profits, instead of an average of the three last preceding years; secondly, there was no ground for knowing whether arbitration would largely increase the terms; and, lastly, it was only desired to ascertain very roughly what would be the operation of the terms of the Act, which, it may be remembered, are the only terms of purchase which have ever been suggested as equitable, and were thought by Parliament of that day to be fair.

desired that the railways should be worked by the Government non-commercially, and those who desired that they should be worked with a view to profit. These views were diametrically opposed to each other. A railway company is a trader who sells the article of transport,—a large capital is invested, a large profit must be made. They cannot make people travel or send goods, they must develop traffic by holding out inducements. Railways, when worked commercially, compete for traffic with other inducements which would prevent people from travelling, so as to induce as many people as possible to travel, and to send their goods by railway. This was done by tempting them by low rates and good accommodation. No doubt where there is only a small traffic to be got the companies exert themselves less; Parliament guards the public in these cases by imposing a maximum rate, and requiring the companies to afford equal facilities to all persons under similar circumstances, and it would be advisable for Government to retain the power of purchase as a safeguard, in case of failure on the part of the companies, but up to the present time, commercial management of railways has produced in this country the best railway system in the world, and there is yet no signs of stagnation. He had had considerable insight into the working of the executive departments of the Government, and he could not agree with Captain Tyler, that Government management would have the same energy as private management. It would substitute working as a duty, instead of working for self-interest. He could not see how State management could effectually deal with the question of the creation of new lines. The local councils proposed by Captain Tyler would represent the directorial element of the present system, without the self-interest which led directors to look after economy, and without the same inducements to economy. If selected from local people, the members would be interested in obtaining low rates and new lines at the expense of the State. With regard to charges, it was generally admitted that a uniform rate was not to be thought of, yet, if self-interest were abolished, upon what principle would the rates be fixed? If the question of profit is not paramount, what is to afford a standard of economical working? Towns subject to the higher rate would always be using their political influence to have the rates brought down to the level of the lowest. If the Government worked on the commercial principle, it would be unpopular; while if it worked on the popular principle of lowering all rates, the result would be simply ruinous. What a field of political jobbery would be opened up in regard to the making of new routes! The State management of railways was beset with difficulties on every side, while the present system had continued to afford, year by year, increased convenience to the public, and it had placed the country on a pinnacle of prosperity, never before equalled by any country in the world.

Mr. CAMPBELL JOHNSTON argued that in India and in Ceylon it had been clearly shown that the State could efficiently work a railway system, and he quoted several passages from blue books and reports in support of his view.

DR. HYDE CLARKE dissented from Mr. Newmarch and supported Mr. Martin, from practical considerations, on the practicability of the financial operations. Going to principles well known in political economy, the operations, whatever might be the nominal amount, was a simple displacement—in financial language, a conversion. It was identical with the conversion of the American five-twenties, very different from the French indemnity loan, and perhaps less embarrassing than raising ten millions of new capital for a railway company during the next panic. Even if the canals and docks were to be purchased, as alleged, it would still only involve a conversion, and it might be observed that these works had long been State property in every other country of Western Europe. While, during an experience of nearly forty years, we had supported private enterprise in railways, he affirmed that the brilliant picture drawn by Mr. Newmarch was rather to be attributed to the genius of the engineers than to the skill of the administrators. Private enterprise, successful in construction, had failed in administration, and managers, able in detail, had not succeeded in conciliating two interests ultimately identical—those of the shareholders and the public. It was only last year third-class passengers were advertised as carried by all railway trains, and this as a sop to the public by the amalgamation companies; and yet twenty-five years ago, at least, the principle had been as clearly proved statistically as now. Government management can be made bad enough, as bad as railway management, though not necessarily so. Its chief defects were want of responsible action and of the effective power of dismissal, but there was no reason suitable management should not be applied. The time had, however, now come when the question would be brought to a practical issue, for the pressure of competition would force it on, and it would have to be satisfactorily solved for the benefit of the people, and would, if delayed too long, be demanded by the voice of the people.

Mr. MARTIN replied that—The interest that has been taken in our paper is of course flattering, but we must take care not to allow the general interest of the subject to mislead us from our special department, that is, from the investigation of the facts and figures connected with the subject.

The objections that have been raised may be fairly divided into two classes—

- I. Those of principle.
- II. Those of the practical difficulties inherent to the magnitude of the scheme.

I. The objections of principle are almost beyond our scope, but as they have been so fully gone into by Mr. Horatio Lloyd and Mr. Newmarch, I may attempt in reply to give the opposite view. Mr. Lloyd argues, and in this Mr. Newmarch fully supported him, that to take the management out of the hands of companies, and to give it over to Government, is pernicious, inasmuch as it takes away from the people that habit of managing their own affairs, which is economically a sound, and practically a successful manner of carrying on business; but I would point out that this is entirely beside the

question. I have shown in my paper that I fully agree to the proposition that local self-government is to be encouraged to the utmost as against centralisation. But railway enterprise is as far as possible removed from local self-government as any scheme could devise. The shareholders and directors of a railway may have nothing whatever to do with the district in which the railway is. The shareholders of the South-Eastern Railway are not required to be men of Kent, or those of the Caledonian to be Scotchmen. That local interests would have fair play, and to give districts some fair share in the management of their lines of communication, is one of the great objects of taking the lines away from private hands and irresponsible governments, and handing them over to the State, not to centralisation, but to local direction, controlled and harmonised by a central authority.

II. With regard to practical difficulties, Mr. Lloyd complains that my accusations of mismanagement were sensational and trivial; but he must remember that each of these cases cost the life of at least one man, and all arose from want of those proper precautions which a supervising inspector would have insisted on.

Government cannot, it is true, make pointsmen perfect, or keep signalmen awake, but they can take care that the "block and lock" system is everywhere in use, and that servants are not allowed on any pretence to be on duty seventeen, eighteen, twenty, or thirty hours at a stretch.

The examples do not show, or profess to show, that the management is so bad as to urge a change of system as an imperative necessity, but they do show that the present system is so bad that it could not be worse under a uniform administration. Mr. Lloyd can hardly have been serious in his argument for the necessity of compensation to collateral interests. The patentee or introducer of a novel manner of saving labour or cost, does not compensate those whom he throws out of work, and any advantage that the country could gain by an altered system of management would be to their own advantage.

The question of compensation for accidents might be readily settled in the same manner as in Belgium, where the State is specially liable in the same way as an individual.

A letter from M. Alfred Allard, a distinguished Belgian lawyer, gives the case very clearly and well; but I should hope that accidents would become so rare as to be an unimportant consideration.

22 Mars 1873.

"Mon cher —

" Tu désires connaître quelle est la responsabilité du gouvernement belge en matière de transports sur notre réseau national, et notamment si cette responsabilité est la même que celle qu'encourent les compagnies de chemins de fer, par exemple celles exploitant en Angleterre.

" La question est complexe.

" La jurisprudence avait décidé par un arrêt solennel de la cour de cassation quel l'Etat en exploitant ses chemins de fer faisait simple-

ment acte d'administration, mais une loi postérieure intervint, qui attribua le caractère commercial aux transports par l'Etat de marchandises, bestiaux, articles de finances, etc.

“ Nous devons donc distinguer le transport des personnes, et le transport des marchandises. Dans le premier cas l'Etat fait une opération civile qui est de la compétence de nos tribunaux civils, et qui est régie notamment en ce qui concerne la responsabilité, par le code civil, car l'Etat n'est point hors de la loi, et en principe il doit réparer tout dommage qu'il cause aux particuliers, de même qu'il doit exproprier et payer tous les biens privés dont l'intérêt public exige l'incorporation dans le domaine public.

“ La disposition du code civil applicable est l'art. 1382, qui veut que quiconque cause dommage à autrui, répare ce dommage, et les limites de cette réparation sont tracées dans les aa. 1150 et ss. selon lesquels réparation est due du dommage qui a dû ou pu être prévu au moment du contrat et qui est une suite immédiate de l'inexécution ou de la mauvaise exécution de celui-ci.

“ Cette règle est la même, je le répète, pour l'Etat que pour les particuliers en Belgique, et c'est ainsi que lors de l'accident de Boussu qui a coûté la vie à plusieurs personnes, nous avons eu à payer près de 600,000f. de dommages intérêts; il va de soi que lorsqu'il y a contestation sur l'évaluation des dommages, c'est aux tribunaux à en connaître et à décider.

“ Dans le second cas, transport des marchandises, j'ai déjà dit que les contestations sont de la compétence commerciale, et en principe la responsabilité de l'Etat est toute aussi illimitée que devant la juridiction civile.

“ Mais l'Etat pour cette catégorie de transports a édicté des règlements spéciaux qui restreignent ou spécifient sa responsabilité.

“ La valeur de ces règlements est une des questions qui m'ont occasionnée le plus de difficultés, et qui ont été le plus discutées en justice.

“ Il y a huit ans environ à la suite d'un arrêt que j'avais obtenu de la cour d'appel de Bruxelles, la jurisprudence leur reconnaissait la force de la loi, depuis des variations sont intervenues dans les décisions, et enfin en 1871 la cour de cassation a souverainement décidé qu'ils n'avaient pas force légale, mais qu'ils constituaient un contrat entre l'Etat et le public. Il y a sur cette question un remarquable réquisitoire de M. Faider, notre procureur général devant la cour suprême.

“ Mais tu remarques que la force de ces règlements est trouvée aujourd'hui non dans le caractère gouvernemental de l'administration qui les a décrétés, mais dans les lois civiles elles-mêmes, c'est-à-dire dans les lois relatives aux contrats et conventions.

“ Ainsi les compagnies concessionnaires de railways en Belgique, se sont-elles empressées d'adopter les règlements de l'Etat, et la jurisprudence les applique à leur profit tout aussi bien qu'à celui de l'Etat.

“ ALFRED ALLARD.”

Perhaps the most important objection to Government possession, and one which has not been fully discussed, is the tight hold

Parliament would wish to assume over the management. It might quite stifle legitimate expansion if every item of expense had to be voted. The railway budget would be more complicated than the Chancellor of the Exchequer's financial statement; for this reason, I proposed that the railway administration should be kept entirely distinct from the general administration of the country, that it should be managed by a distinct and separate board of control, who would only need to apply to Parliament to confirm their half-yearly or annual budget, or, of course, when they wanted to raise money.

The difficulties inherent to the magnitude of the scheme have been much exaggerated. In the first place, I must confess disappointment that we have not been set right on the figures representing the cost. I had hoped that we should have heard from some of the great railway authorities, trustworthy statements of the present value of their preference stocks and shares, and that we should have had more accurate calculations than the magnificent 800 or 1,000 millions freely but wildly dealt in.

I cannot agree with the "Economist" that the prospect of railways are so bright as to warrant the belief that their dividends will steadily increase. Did I think so, I should not be able to understand why every one did not sell out their foreign bonds and buy railway stocks. Speaking from my own experience, I find a much stronger inclination for investments in foreign bonds paying 6 to 7 per cent. than in English railways. I have no doubt but that the traffic will increase enormously, but this very increase will, under our present system, tend to promote new lines being made, and what has happened before will happen again. Competition will keep down dividends, but will not permanently lessen fares.

With regard to the money part of the question, I find it has been so ably put by Mr. Hammond Chubb that a repetition would be useless.

I may now reply to a few of the challenges thrown down during the discussion. Mr. Allport took exception to my figures as not representing the *authorised* capital. In this he is clearly wrong. Whatever may be the amount of capital authorised, it is only with what is called up and paid that we have to deal, for it is only money paid that has been expended in property, whether land or rolling stock, which property only is marketable. Authorised capital not called up is a goodwill of no value whatever. Captain Galton again challenged the accuracy of the statement that the State could purchase the railways at twenty-five years' purchase of the average of three years' earnings. A careful examination of the Act convinces me that Mr. Chubb's statement is perfectly correct. The arbitration clause is merely a protection against the appropriation by Government of railways paying no interest to their shareholders, which, without this clause, they could do simply without any money payment of any kind.

Mr. Allport was very severe upon the following passage, which he said he could not understand :—"One payment either for passengers or goods would carry to any other station in the kingdom, whether on the same line or not." This, Mr. Allport said, with much emphasis, could now be done. I felt sure that Mr. Allport

was wrong, and have communicated with the South-Eastern and London Chatham and Dover Railways, asking their rates to a station on Mr. Allport's own line (the Midland), with which I have often some communication. In both cases the purport of the answers, which I have in my possession, were the same. "We do not book beyond our own lines," with a courteous offer of special credit and arrangement afterwards, which is good natured, but nothing to the purpose.

Mr. Allport can hardly have meant to say that at the end of a journey a parcel can be paid for, *i.e.*, a debt recovered by one party, to be divided between several creditors. That is obvious; but otherwise his statement is an unaccountable blunder. Again, the suggestion of the command of the coal ports is not mine, but a quotation from the published report of the Joint Committee, as I have carefully shown in my paper.

However that may be, the subject is one of great practical importance. I am sure that sooner or later the voice of the country will demand a control over its most important economy, and will not leave such a vital power in the hands of any private company, however powerful and enlightened.

It took thirty years for the public to get the companies to recognise the fact that they were meant to give facilities to the million, and not to the rich; it may take another thirty years before we get all we could wish for out of present arrangements. But I am sure that sooner or later the day will come when we shall manage our own railways, and however convincing (to themselves) may be the arguments of Mr. Lloyd, Mr. Newmarch, and Mr. Allport, I shall retire from those inquisitors as a great man once retired from his inquisitors, crushed with the weight of dogmatic assertion, but still muttering "E pùr si muove."

**THE PRESIDENT.\***—We have had brought before us by Captain Tyler, in a clear statistical form, the main facts of the English railway system, and Mr. Martin has advocated in his masterly paper the purchase of that system by the State. Such is the issue that has been raised, supported, combated, three evenings in these rooms by men the most competent, in its financial, administrative, statistical, and political aspects. The question is not new, and it is now ripe for decision. No doubt it is surrounded with difficulties which a Royal Commission and a Joint Committee of the two Houses of Parliament—most ably constituted—have stated, but have not ventured to grapple with. A royal commission investigated the whole subject some years ago, and made a series of recommendations, to carry out which, in twenty out of thirty-two instances, Mr. Farrer says that "nothing has been done." The summary of the history given by the Joint Committee is: "That committees and commissions carefully chosen have for the last thirty years clung to one form of competition or another; that it

\* As this has been a debate on one of the most important topics that have ever engaged the attention of any scientific society, I have thought it right to print in full the notes I prepared for the summing up.—W. FARR.

has nevertheless become more and more evident that competition must fail to do for railways what it does for ordinary trades, and that no means have yet been devised by which competition can be permanently maintained."—(P. xviii.)

That is the deliberate judgment of the Joint Committee, on which sat men so eminent as Lord Derby, Lord Salisbury, Mr. Childers, Mr. Chichester Fortescue, and others. The great railway companies are proposing amalgamations, and are buying up the canals, so as to get complete control of all the traffic; and as if to prove how impossible it is for human ingenuity to suggest any other remedy than State purchase for the evils certain to arise from the system as it is, the greater part of the recommendations of the Joint Committee refer to the creation of a board which is not to control fares effectively;\* and to measures for sustaining as competitors against the railways the existing canals of the country. The canals are to compete with and to keep the railways right. Unfortunately, as people do not now travel by canal, there is but faint hope from that quarter.

Under Acts of Parliament the railways have been created; but Mr. Gladstone, when President of the Board of Trade, in Sir Robert Peel's Ministry, foreseeing what must be the inevitable result of the railway system, then in its infancy, introduced the Bill which was passed in 1844 with some difficulty, providing for the purchase by the State of all future railways or branches at any time twenty-one years after the passing of their Acts. The Bill had, of course, the sanction of his colleagues, among whom were, besides Sir Robert Peel, the Duke of Wellington, Lord Lyndhurst, Lord Stanley, Lord Aberdeen, and Sir James Graham. Thus, treading in the steps of Prussia, which, under the guidance of great statesmen in 1838, had passed a law giving the State the right to buy, after a certain date, all future railways at the price of twenty-five years' purchase of the previous five years' net profits, the basis of the purchase of railways in England was laid in 1844, at a date when there were only  $2,320\frac{1}{2}$  miles of railway sanctioned.† On 31st December, 1871, 13,056 miles were purchasable under the clause. 85 per cent. of the railway property is held under this tenure.

Of the right of Parliament to sanction the purchase of all the railways upon just, equitable, and liberal terms, there can be no question; and the next Parliament, if it chooses, can either sanction competing lines, or authorise the Government to lay down such lines. The purchase by the State, then, becomes a question of expediency. The magnitude of the operation has been impressed upon us by some speakers, and I do not think it has been overrated. Here we have 15,376 miles of railway laid down at the extravagant cost of 553,000,000*l.*: each mile, on an average, cost, Captain Tyler tells us, 35,944*l.*;‡ and, notwithstanding this exorbitant cost, is worth more on the Stock Exchange by about 10 per cent., as Mr. Martin shows.

\* See "Report of Joint Committee," p. xlvi.

† Captain Tyler's tables, pp. 257 and 258.

‡ See Board of Trade Railway Return.

The gross revenue of the system was 49 millions, pretty nearly the revenue of our Indian empire; but, unlike that empire, it yielded, in 1871, a net profit, after deducting 23 millions as working expenditure, of 26 millions. The net receipt is increasing. All this result has been achieved by the enterprise of companies virtually of limited liability, the legislature retaining all its rights, having rendered them help at every step at great cost.

The railway system is now in the hands of about fifteen great and ninety-one smaller working companies. Constant consolidation has been going on, and all the great battles of the companies have been fought for the possession of entire territories to facilitate working operations, and to exclude direct competition. This they have nearly succeeded in doing; and, as less than the evil of numbers of small conflicting lines, we shall have ere long, by amalgamations, a sort of Heptarchy, and possibly a monarchy within a monarchy, with power to levy almost as much more than 49 millions a year as they please on passengers and goods; for Mr. Chichester Fortescue admits, what is self-evident, that the new tribunal which he is about to create cannot effectively reduce fares or rates. An equal mileage rate cannot be entertained, so any rate named by Parliament is a maximum, and has little or no practical effect. The prospect has led Captain Tyler and Mr. Martin to advocate State purchase. Each of the great railways now enjoys a monopoly; in the end the monopoly will be universal.

There has been introduced into the discussion the question of the relative advantages of Government, company, and private management; or rather, Mr. Newmarch denounced eloquently, as he always does, centralisation—the popular nickname for work done by the Nation—and had much to say in favour of work done by private enterprise. But that has only a remote bearing on the present question; and we shall all agree that manufactures and trades in general are best managed by individuals or by firms; that others, by reason of their magnitude, can only be handled by companies; and that the defence of the country and certain great public works can be best dealt with by that greatest of all companies—embracing, in fact, all others—the nation, with the Sovereign at its head. The Government deals with the army, the navy, the courts of justice; but, except in London, the police is under the county and borough authorities. In the same way each county might have its railway if the inhabitants never travelled beyond its limits; but if every county is to be in railway communication with every other county in Britain, the system to effect this must be national. The question, then, to consider is to which of these three categories railway communication belongs.

It is not for us to say a word against companies; in England, up to a certain point, they have always had free scope. A Company, availing itself of the genius of Clive, Hastings, and Wellesley, conquered India; but in the end its vast proportions led to its supersession by the State. It was first controlled by a Board, and then, after a great catastrophe, replaced by a Secretary of State and the Indian Council.

Mr. Newmarch fastened on the expression of Mr. Chadwick, that

the Board of Trade is a "sham board," because it has, besides its president, on its committee the Lord Chancellor, the First Lord of the Treasury, and other ministers and privy councillors; without adverting to the fact that the president thus escapes no responsibility, and that his colleagues are not paid. Mr. Newmarch intimated that other Government boards might be sham boards too. That may not be said, we are to infer, of railway boards, even of very small lines. But take the London and North Western Board, which has, besides its able chairman, Mr. Moon, twenty-nine members, including among others his Grace the Duke of Sutherland. This is, we know, not a sham board, but it is impossible to say what Mr. Chadwick might call it or other railway boards with much less business. He might even call every executive board a "sham." Then there were the usual charges of red tape, which exists, no doubt, but will diminish when the heads are trusted with the administration of their departments, under due responsibility, as they must be in a great business, such as railway management.

Mr. Newmarch asserted that the railways would cost the Government 1,000 millions, and, returning a revenue of only 25 millions a-year, the purchase would prove a financial failure. I was anxious to learn from such a great authority the ground of this calculation, as the market price of the stocks is to-day 607 millions; and forty years' purchase is a long price to give even for land with beauties and associations which the proprietor might love to dwell on; while we can scarcely conceive any one confessing to a sentimental affection for iron rails, bridges, and not very picturesque railway stations. One would think twenty-five years' purchase—the usual price of well-secured ground rents—nearer the mark.

Then there are the great facts that, by consolidated management, the expenditure can be reduced; that the fighting expenses will be abolished; that by increased facilities and reduced fares and rates passengers and goods carried may be multiplied indefinitely without anything like a corresponding increase of expense; and finally, as we are told 300,000 men are employed by railways, great advantages may be expected from the combination of the great military services with the railway services of the kingdom.

Objection is taken to the extension of Government patronage which the accession of a railway department will involve; but practically the Government—or rather the House of Commons—has recently, instead of increasing, foregone a great part of its patronage. No civil servant can get his son an appointment without an examination, often competitive with the sons of other classes. Then, in the higher appointments, Mr. Gladstone has cut off the Irish bishops; no minister can now nominate an Archbishop of Armagh with an income of 15,000*l.* a-year. So that the power to appoint the heads of a railway department is not likely to corrupt the virtue of public men, particularly as the first appointments may probably be made from existing boards, if, after the rich harvest the members have enjoyed in speculative companies, they will condescend to accept pay even as high as that of the Irish bishops.

The advantage to the public of reduced fares, more trains,

greater safety of life, cheaper rates for parcels and goods, are evident, and though in all this advantage the shareholders would participate, the price paid for their shares should be greater than they get now in the market, and their dividends once secured be subject to no reduction.

And whatever may happen when the railways are absorbed, as they must be one day, the country can never forget the services rendered by inventors, such as Stephenson; engineers, such as his son; contractors, such as Brassey; chairmen of boards, such as Mr. Moon; managers, such as Allport. Of the railway service, as it exists, England has every reason to be proud. And among all the companies that have ever existed, perhaps none have rendered England greater service than those which laid down the first railways.

Mr. Allport, taking exports as his measure of prosperity, reminded us that they fell to the lowest ebb in 1834; that then the railway system came into play, and that they have since run up rapidly year by year until their amount is now stupendous. This flow of the tide of prosperity he claims for the railway system. The flow is unquestionable; and if the railways under the regimen of high fares have had more to do with it than some other causes, to which it has by some been exclusively ascribed, what will they not accomplish when traffic is relieved of its restraint? As often happens, Mr. Allport sees only one cause, and he is not so far wrong as those who ascribe the commercial prosperity of France, for instance, to the Second Empire; but in truth the progress of England in this period is due to many causes, but mainly to the increase of the number, industry, and intelligence of the people; to their use of the new powers of fire and steam, equivalent to hundreds of millions of arms, all applied by new and exquisite machines, locomotives on railways among others, to the supply of products innumerable to meet the wants of the world with which these islands are brought into immediate relation by a new, powerful, magnificent marine.

Mr. Lloyd and Mr. Allport justly observe that a certain number of mishaps are inevitable in railways; but both attach less weight to the loss of life than I do; and I feel confident that the danger of railway travelling may be, and would be, greatly diminished under State management. It is true that of the increasing deaths on railways, the greater number occurred to railway servants, and were the consequence of rashness or carelessness: but others are referable to bad arrangements, and, in a considerable number of instances, both causes concur to produce the fatal effect. A case of this kind made an indelible impression on my mind. One of the porters called at my house one evening to request me to go to a railway station where an accident had occurred, and I found, on my arrival, the body of a gentleman I knew well—the Queen's Proctor—stretched out on the siding; his spine had been crushed, and he was dead. The train passed on, and the body was removed to the station. Then I was requested to convey the sad intelligence to his wife, whom I found waiting for him after dinner; and I confess that I never discharged a more painful task. Had Mr. Lloyd stood in my place he

would never speak lightly of railway accidents. Though many of the 1,168 persons in 1871 killed on railways were obscure individuals, yet they were probably leading useful lives, and left friends who felt their loss. In the case to which I refer, the railway company incurred no damage; the passenger suddenly awoke, and jumping out of the carriage as the train started, was seized by the railway porter, an old soldier, and in the struggle fell between the carriage and the siding. He had violated the company's bye-laws, and was killed; but the jury represented to the company that if their carriages had been fitted with a proper sideboard instead of a narrow step the victim would have been still alive. Nothing was done; and you will recollect that a similar fate lately befel an officer who had distinguished himself in India. I did not understand Mr. Allport to contend that the block-and-lock system was not the safest way of working trains. His real objection to it was its expense; it would cost the Midland 600,000*l.* Then he quite fairly reminded us of the loss of the "Captain" and of the "Megæra," under the Admiralty. Those losses were, indeed, deplorable; and it is worthy of note that they occurred under ministers who were not trained in the public service, but conscientiously believed they were applying the principles that regulate private enterprise to the administration of a public department; that private enterprise which, in the hands of a Green or a Cunard Company, is conducted with the least possible risk to human life, but in the hands of others lands us in such catastrophes as the wreck of the "Atlantic," and such abuses as Mr. Plimsoll has exposed. The losses of life by accidents in Her Majesty's Navy are incomparably less than they are in the mercantile marine; and if the safety of railway travelling would be increased in the same proportion under State management, it is a strong argument in its favour. The companies paid in the year 1871 no less than 312,334*l.* for losses of life and personal injuries: this is a heavy annual charge, which, capitalised at twenty-five years' purchase, is worth 7,808,350*l.* Now, though it may not pay the Midland Company to incur an expenditure of 600,000*l.* on the chance of saving a few lives or of diminishing personal injuries, it would pay the State, which had a permanent interest in the revenue of the line and in the lives of passengers.

The question was raised as to what remedy people would have against the Queen in the case of death or injury on State railways. The remedy is simple, and I suggested it some time ago, for it may be carried out through the Clearing House by the railway companies themselves. Insure the lives of the first, second, and third class passengers for limited amounts, paid for as at present by their tickets; and further, where people estimate their lives at higher amounts, insure them for annual premiums, which would not be high, up to 5,000*l.* or 10,000*l.*: personal injuries to be treated on the same basis. Nothing can be more unsatisfactory than the present state of this question, both to the public and to the railway companies.

I may mention that I have shown\* from the companies' returns

\* See Appendix to Registrar-General's Thirty-first Report for the year 1868. Appendix A, pp. 202—233.

that, taking the time passengers are on the lines into account, the mortality from railway accidents was at the annual rate of 2 per 1,000; it should be reduced below 1.

To sum up the advantages to the people of public management, I place on the first score greater safety to life and limb in travelling; next to this in importance are reduction and simplification of the fares, both of annual and day tickets. The fares have been, until lately, prohibitory to the great bulk of the people; to prevent a few rich men from travelling in second class carriages, and a certain number of the middle classes from travelling in third class carriages, the second class carriages were for twenty-five years kept in an execrable condition compared with those of the continent, and comfortable travelling by third class carriages was rendered impossible. It is greatly to the credit of Mr. Allport, of the company he represents, and of the other companies that have done likewise, that third class carriages are now attached to nearly every train. In the number of passengers there has been an enormous increase; the financial results, too, Mr. Allport admits, are satisfactory. In fact the plant, the rolling stock are there, and the cost of conveyance increases in nothing like the same proportion as the distance, and as the number of persons conveyed. The policy of reduced fares may be pushed much further; but fares below a certain point involve an immediate reduction or loss of dividend, of which the directors of a commercial company cannot incur the unpopularity, although they are certain in the end to recoup the loss. Under State management this may be attempted, as was done with advantage when the postage of letters was reduced from 7d. to 1d., which, leading to a loss of revenue, no less an authority than McCulloch, the political economist of the day, denounced as passing from one "absurdity" to another;\* yet the change paid in the end. In fact a reduction of fares and of the freight of goods would operate precisely as remissions of taxation have hitherto operated; what is lost under one tax is gained under another, and while the revenue incurs no ultimate loss, the benefit to the community is enormous.

Under State management it might be quite practicable to give the season ticket holder the right to travel over the whole system, as he could evidently be only on one line at a time. Then the fares and the rates might be simplified, not varying with every variation of distance and station, so as to require for one railway 4,000,000 rates. The railway system may, like the Post Office, put every station in easy communication with every other station: and some future Rowland Hill may persuade Parliament to do for fares on the State railways what it has done for the postage of letters; for this would distribute the population more equally over the country, prevent unhealthy congestion in cities, and give the inhabitants of remote parts of a common country advantages to which they have a claim.

The *shareholders* of the *railways* have, it is admitted on all hands, a just right to the fairest consideration; that they are not likely to suffer by State purchase is clear from the fact that the mere rumour

\* Commercial Dictionary. Article, "Postage."

of it sends up the price of their shares ; that is, enhances the value of their property. The joint committee of the two Houses report that “*the shareholders are to a great extent a fluctuating and helpless body.* The history of railway enterprise,” they add, “*shows how frequently their interests have been sacrificed to the policy, the speculations, or the passions of the real managers.*”\* This could not occur after State purchase.

“There is,” as the committee adds, “a powerful bureaucracy of directors and officers.” Under State management the services of two thousand directors may not all be required, and an arrangement would have to be made, such as is made now, when one company amalgamates with another. This process is going on every year, and if, in spite of legal and financial obstacles, one company can buy up another, Mr. Lloyd could, with his recognised ingenuity, no doubt suggest a course by which, under the sanction of Parliament, the State might buy up one after the other all the companies on equitable terms. Thus everybody might gain by State purchase.

Should it be deemed desirable by Parliament to purchase the railways, it has been contended that the Queen’s Government is bound to complete the purchase, if at all, at one operation ; that it is unequal to the task ; that it is destitute of the required financial skill ; and that, if acquired, public servants could not work the railways so economically, so well as they are worked now by railway boards.

Why, if it be deemed disadvantageous, it is replied, should the Government be compelled to do otherwise than the great railway companies themselves, which absorb their neighbours at leisure ? Mr. Martin and Mr. Hammond Chubb—and their schemes are not the only ones—have shown practically how the financial operations can be wrought out. The Government has, it will perhaps be admitted, the command of a certain amount of the financial skill of England ; and conversion, an operation, difficult as it is on 600 millions, is not impossible in a country where those millions have been created in a few years, and through the Clearing House of whose metropolis alone, 5,360 millions passed in 1872, and 6,000 millions are expected by Sir John Lubbock to pass in the present year.† The operation is difficult, vast, complicated ; but, should the country decide in its favour, it is not beyond the capacity of our public men. Mr. Allport, as well as Mr. Newmarch, further argued that Government must be betrayed into giving 1,000 millions for the railways now existing ; that is, into giving more than 60,000*l.* a-mile for railways which are not worth 40,000*l.* a-mile in the market, which it could construct for 30,000*l.* a-mile, and which it has to a large extent the power of acquiring at the rate of twenty-five years’ purchase on average profits.

What is their proof of this ? The Government, we are told, purchased the telegraphs at too high a rate, and in one case, Mr. Allport says, was juggled between a telegraph and a railway

\* Report on Railway Amalgamation, p. xxix.

† “Times,” 26th March, 1873.

company into paying thirty years' purchase for a revenue terminating at the end of a year or two, and therefore, will be juggled again. Is this quite certain—is it probable? A burnt child is on his guard. A Chancellor of the Exchequer is sometimes known to have the wisdom of the serpent as well as the innocence of the dove. He may now avail himself of actuarial skill.

Then, as to efficiency of administration, Captain Douglas Galton doubts whether the sense of duty with which he credits the public services is as animating as the sense of private interest; but, setting railway porters aside, I do not see why this interest may not be enlisted to at least as great an extent under Government as under Company management. The Queen is free to improve the conditions and efficiency of her service.

His Royal Highness the Prince of Wales, our honorary president, lately bestowed a just meed of praise on the civility experienced at railways; and of this the public will probably lose nothing by the transfer of the service to the Queen. Her ministers at the head of public departments are generally English gentlemen, whose example descends through their officers down to the rank and file. Should it prove otherwise in the Railway Department, some honourable member will no doubt be ready to propose, among other new ministries, a minister of good manners; so that the service might recover the lost art once taught in these Isles by a Chesterfield.

That the officers of the Inland Revenue, Customs, and Post Office with the Money Order and Telegraph Service inclusive, working under the eye of the public, are efficient no one doubts; and all these men are in the service of the Government. What reason is there, then, to assume that the railway service will not be fully as efficient—nay more efficient—as the Queen's Railway Department, well organised and working in harmony, than it is under one hundred disjointed railway boards? The system must, I presume, like the army, be under one minister, and one railway commander-in-chief, with general officers at the head of divisions, and other grades of railway officers, all chosen, with the rank and file, for their fitness, and promoted for their efficiency by the staff under whom they serve. In the selection of officers it is assumed, somewhat strangely, that the Queen could not be trusted—that she must be unsuccessful. You trust the Queen to select Her Ministers; you trust the Government to select Lord Chancellors, Judges, Archbishops, Bishops, Generals, Admirals, Governors-General of India, Governors of Colonies, and Heads of the great public Departments, then why should you doubt their capacity to appreciate and appoint such men as Mr. Moon, Colonel Packe, Mr. Price, Sir Edward Watkin, Mr. Laing, Mr. Forbes, Mr. Eborall, Mr. Oakley, Mr. Allport, and the other able men that govern and manage the railways? Again, if the patronage is to be so dangerous in the hands of a Government, what may it not become in the hands of powerful Boards, irresponsible to Parliament, irresponsible to the public? America has shown us what turn private enterprise can take in that direction, and how disastrously directors can deal in patronage as well as in shares. All

these things have to be carefully weighed on both sides, one against the other.

That the difficulty of an administrative work does not increase in the same degree as its magnitude many of you know—I know—from experience. I was associated with Major Graham, one of the best administrators in the country, and Mr. Hammick, in taking the census—that is, in recording on one day, by the agency of paid officers, the names, ages, and various other particulars respecting the millions of inhabitants of England. We took the census of 1871 with no more difficulty than the census of 1851, although the population had increased nearly five millions; nor was any more difficulty experienced in enumerating the population of Great Britain, as was done by us in 1851, than in enumerating the population of England alone in 1861. It was a mere multiplication of similar operations by an extension of organisation. So it is with railway management: if you can manage one railway you can manage two, or, as the North Eastern does, thirty-seven, and, by an extension of the same organisation, the hundred railways of the kingdom: if you can transport 100,000 you can transport, over a variable number of miles, 1,100,000 passengers daily—about the number, correcting for season tickets, returned in 1871. And so with minerals and goods, to the amount of half a million of tons, carried daily a certain number of miles; it is a mere question of the multiplication of similar mechanical arrangements working together in harmony. The greater the work the more available is the fruitful principle of the division of labour.

There is nothing, then, as it has been shown, in the magnitude of the transfer, either financial or administrative, to hinder the State from acquiring by purchase and administering the railways, either wholly or in part. The hindrance lies in the railway interest, which now wields an increasing revenue of 50,000,000*l.*; and in the reluctance of Parliament to take up State purchase until all other measures have failed. Competition has failed, and so will control, for evident reasons; and the increasing power itself of the railway interest will then compel the Queen to take the service of railway transport and travelling into her own hands. The Joint Committee reports that “important *links* of canal navigation are in the hands of railway companies;” they are seeking to obtain control over public harbours, with a view to lessen competition by sea, and they are forming combinations by amalgamation and otherwise among themselves. For what object? To secure not only complete command of the passenger, but of the carrying traffic of the country. The end is approaching, when the transit of men and goods will be as complete a monopoly as the postage of letters, and when the directors will have the same power to tax passengers and goods as Parliament has to tax letters; but the directors, by the very principle of their existence, must charge such fares as will yield a maximum profit, precisely as the Post Office did before Rowland Hill's reforms, and so will place the same fetters on liberty of travelling and commercial enterprise as were formerly imposed on correspondence. As all the charge above the cost of postal and telegraphic service is taxation, so all that is paid in fare above the

cost of railway service is taxation ; but railway taxation, like railway service, will bear no comparison with letter and telegraph taxation. It has a larger field of operation.

The Post Office receives, by the last returns, less than 6,000,000*l.* from the public, the railways 49,000,000*l.*; the railway revenue has been doubled in fourteen years ; and it will, at the present rate of growth, ere many years exceed the imperial revenue under the control of Parliament.

In Free Trade this country has taken the lead since the days of Mr. Huskisson, who was killed by the first railway—not to be interpreted, we may hope, as of ill omen ; and free trade is something more than the importation of wheat, meat, and the raw material of manufactures by sea, duty free. It is the free circulation of those—of all other commodities, and, what is still more, of the population. How can this circulation be free should the railway companies retain the right to levy arbitrary tolls, not only on the imports admitted by the State duty free, but on minerals, on coal, and on the products of agriculture and of every industry ? Liberty of travelling under such a monopoly cannot exist. The Queen's highways will no longer be free.

It is evident that this question of Free Railways is of infinitely greater importance than the question of free trade in its narrow sense, or even than the cry put in circulation by a great man for a free breakfast table ; which, as Sir John Lubbock pointed out, if we set aside sugar for confectionery and sweets for children, resolves itself, after all, into the question, Shall we take a little more or less of the tea leaf—of the coffee berry—in the warm water we drink daily ? its natural pendent being a free pipe ; for if tea excites, tobacco soothes the nerves. “Free railways” is a very different affair ; it is a question of the safety of life, of free travel, of personal liberty, of the circulation of minerals, of coals, of goods, of manufactures, of stock, of farm produce of every kind at equal easy rates. It has been so placed before the country by Mr. Martin’s paper, by Captain Tyler, and by this discussion. It is a question, indeed, to go to the country ; it cannot be decided here ; and should “Free Railways” be the cry of any party at the next election, it will be discussed in all its aspects, and, let us hope, in all the heat, with the same regard for existing interests—for these great commercial companies—with the same appreciation of the railway service under the conditions of its working existence, the same sacred regard for property, and the same tolerance of errors of direction, as have been displayed in this room. Its solution demands time ; but the sooner it is solved the better for the country, and for the companies ; otherwise, as the evils are aggravated, exasperation may arise such as animated Fox, Burke, Sheridan, Francis, and latterly Mr. Bright, in their attacks on the directors and servants of the East India Company ; or as led the greatest orator of his day to threaten, not to shunt directors off their lines, but to shunt one of the Estates of the Realm into the river !

The East India Company and the Railway Companies fell into many errors, and even crimes, at their origin, but they have rendered imperishable services to mankind ; and they have alike

earned, and are destined to receive the same apotheosis—Absorption into the Sovereign Power.

Some of your English delegates in Russia were sent by the short railway from Petersburg to Oranienbaum, and on the way an intelligent officer told me that his regiment was working the line : the various regiments taking such tasks by turns. The Russians borrowed the practice from the Prussians ; who work half their railway system as part of the public service, whereas the late French Government only meddled and controlled, with a result which the disasters of war revealed. The great German strategist found an army already prepared for his purposes, and wielded the railway system as effectively as Murat handled corps of cavalry. Is it not evident that, if the State work the railways, Mr. Cardwell, who, like Mr. Gladstone, has already left his mark on railway legislation, might interweave these 300,000 men of whom we have heard so much into his system of national defence, and that at little cost, when the number of half-pay officers and pensioners of the army are taken into account ? The navy, too, could supply its full share of scientific officers. And would not the harmonious combination of the navy, army, and railway service, under the command of a great strategist, who had them all well in hand, render England invincible ? This is not the least important aspect of the question.

I have now to ask you to express your thanks to Mr. Martin, for his able, clear, and temperate paper on one of the greatest questions of the day. I trust that we shall see him advocating the same views in the higher sphere of the next Imperial Parliament. To Captain Tyler we are much indebted. We owe also especial thanks to gentlemen, such as Mr. Horatio Lloyd and Mr. Allport, who, in addition to some of our own Fellows, have so well argued the question from the Companies' point of view. This Society will always be glad to see, and to admit to its Fellowship, representatives of the great railway interest.

Thanks were voted to Mr. MARTIN, and the meeting adjourned.



## MISCELLANEA.

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*I.—On the Valuation of Railways.* By W. FARR, F.R.S.

RAILWAYS are valued in various ways.

1. By the cost of production, which, according to the returns, at the end of 1871 was 553 millions.

2. By the market price of the various stocks and shares, which Mr. Martin shows, on the above basis, was 607 millions.

3. By the profits taken at a certain number of years' purchase, as under the provisions of the Act of 1844, which fixes the price at twenty-five years' purchase, subject to increase by arbitration if a company appeal.

It is evident that in a railway, capital is sunk, which, as in any other mercantile concern, may yield little or no profit for a time, yet will be very profitable eventually. The English act, therefore, only gives the right to purchase after the lapse of twenty-one years; the Prussian law after twenty-five years: and as profits fluctuate, the English act takes them at the average of the last three years, the Prussian five years.

The value of railway stock in the market, as that of other things, depends on demand; but, based on the profits they have yielded and are likely to yield, it takes all elements into account.

The profits are the parts of the revenue remaining, after deducting reconstructive and working expenses; and being the difference of two variable sums, they must be valued as annuities, which are not necessarily certain or invariable. The value will vary in the case of each railway; but I am not aware that the dividends of the debenture or the preference stock of any railway are worth more than twenty-five years' purchase; in many railways they are worth less.

The dividends of ordinary railway stock are fluctuating: in several lines they are *nil*; the expenditure has been incurred, but the traffic has not been developed; in some they are decreasing, but on the best lines they are increasing; and the prospect of increase entitles them to be valued as increasing annuities. Now an increasing annuity cannot be valued as a fixed invariable annuity; for the

formula that gives the year's purchase in the ordinary case is inapplicable.

In valuing it is most convenient to deal with the fixed annuity and the increment separately. Thus, let a present 4 per cent. dividend be taken on a 4 per cent. table as worth twenty-five years' purchase; then to this must be added the value of its increment reduced to the ordinary form of year's purchase. This increment has a certain limit, which, fixed at any amount, may be attained in  $n$  years by steps increasing irregularly, but assumed for the purpose of valuation as increasing regularly, and either in arithmetical or geometrical progression.

Thus, let the increment of the annuity be  $e$  in the first year after a given date,  $2e$  in the second year,  $3e$  in the third year,  $ne$  in the  $n$ th year; then making the year's interest of  $1l. = i$ ,

$$\text{and } v = \frac{1}{1+i}$$

$$V_n = e (1v^1 + 2v^2 + 3v^3 + \dots + nv^n) = \text{the value of such successive increments.}$$

I have had calculated as an illustration the subjoined table of the value of  $nv^n$  up to  $25v^{25}$ , when  $i = .04$ , or the annual rate of interest is 4 per cent. per annum.

By the tables of the Board of Trade the average proportion per cent. of net receipts on the whole of the capital are shown to have been—

In the four years 1860-63 = 4.00,	
" " 64-67 = 4.07,	
" " 68-71 = 4.34.	

The average annual increment from the middle of the first to the middle of the last period was .0425. Now, assume that the increment of dividend will be a shilling .05l. annually, and that the dividend will be  $4\frac{3}{4}$  per cent. in fifteen years, then the increment for that term by the table will be worth  $80.9 \times .05 = 4.045$ .

Again, assume that the dividend increases annually 1 per cent. = .01, or at any given rate; so that every 1l. of dividend in one year becoming  $(1+e)l. = r$  in the next; this annuity will take the form—

$$r^1 + r^2 + r^3 + \dots + r^n:$$

of which the present value will be expressed in the usual way—

$$V_n = vr + v^2 r^2 + v^3 r^3 + \dots + v^n r^n.$$

But  $v = \frac{1}{1+i}$ ; and  $r = 1 + e \therefore u = vr = \frac{1+e}{1+i}$  is actually

the rate of this geometrical progression, decreasing when  $i + e < i + i$ .  
The above value may therefore be thus expressed :—

$$V_n = \left( \frac{1 + e}{1 + i} \right)^1 + \left( \frac{1 + e}{1 + i} \right)^2 + \dots + \left( \frac{1 + e}{1 + i} \right)^n$$

This value is greater than that of the simple series of the values of an invariable annuity, and it approximates to the values of annuities at lower rates of interest. Thus let

$$i + e = \frac{1.05}{1.04} = 1.00962 ;$$

and if  $i + i = 1.05$ , the first series for a fixed annuity is

$$V_n = \frac{1}{1.05} + \left( \frac{1}{1.05} \right)^2 + \dots + \left( \frac{1}{1.05} \right)^n$$

And the second series for an increasing annuity :

$$\begin{aligned} V_n &= \frac{1}{1.05} \times \frac{1.05}{1.04} + \left( \frac{1}{1.05} \times \frac{1.05}{1.04} \right)^2 + \dots + \left( \frac{1}{1.05} \times \frac{1.05}{1.04} \right)^n \\ &= \frac{1}{1.04} + \left( \frac{1}{1.04} \right)^2 + \dots + \left( \frac{1}{1.04} \right)^n \end{aligned}$$

So the annuity, in this case *increasing* .962, or nearly 1 per cent., every year valued on the assumption that the rate of interest is 5 per cent., becomes worth twenty-five years' purchase ; whereas if the dividends were constant they would, at that rate of interest, be worth only twenty years' purchase.

In fixing on twenty-five years' purchase, Parliament, therefore, might have taken the probable increase of dividends into account, as mercantile revenues are seldom worth more than the best houses, or twenty years' purchase.

*Decreasing annuities* are valued by reversing the series ; thus, instead of the previous series we should have for the value of the whole annuity a series such as De Moivre suggested for his life table.

And the value of an annuity, taken at 4 per cent., but decreasing in geometrical progression, always approximates to the value of an annuity taken at a higher rate of interest. Thus, if the rate of decrease is  $\frac{1.04}{1.05}$ , the value of the perpetual annuity worth twenty-

five years' purchase at 4 per cent. falls, and is worth, only twenty years' purchase.

TABLE for Calculating the Values of the Increments of Annuities, Increasing by a Fixed Quantity ( $e$ ) every Year for  $n$  Years.

(Interest is taken at 4 per cent. per annum, and  $v = \frac{1}{1.04}$ ).

Year.	$n v^n$	Sum of $nv^n$ = $V_n$ .
1.....	.9615	.9615
2.....	1.8491	2.8106
3.....	2.6670	5.4776
4.....	3.4192	8.8968
5.....	4.1096	13.0064
6.....	4.7419	17.7483
7.....	5.3194	23.0677
8.....	5.8455	28.9132
9.....	6.3233	35.2365
10.....	6.7556	41.9921
11.....	7.1454	49.1375
12.....	7.4952	56.6327
13.....	7.8075	64.4402
14.....	8.0847	72.5249
15.....	8.3290	80.8539
16.....	8.5425	89.3964
17.....	8.7273	98.1237
18.....	8.8853	107.0090
19.....	9.0182	116.0272
20.....	9.1277	125.1549
21.....	9.2155	134.3704
22.....	9.2830	143.6534
23.....	9.3317	152.9851
24.....	9.3629	162.3480
25.....	9.3779	171.7259

The sum  $nv^n$  increases for twenty-five years, it declines after twenty-six, and approximates to zero.

Formula  $e V_n$  = value of equal increment  $e$  for  $n$  years. Thus, a fixed annuity at 4 per cent. interest, is worth twenty-five years' purchase, and if the annual increment is  $e$  every year, the value of the increments is  $e V_n$ . Let  $e = .05$ ,  $n = 15$ , then by table,  $.05 \times 81 = 4.05$ .

## II.—Railway Statistics furnished by CAPTAIN TYLER.

LIST OF RAILWAYS SANCTIONED BEFORE THE ACT OF 1844, as prepared at the Board of Trade, and given in the Report of the Duke of Devonshire's Commission.

"There were  $2,320\frac{1}{2}$  miles of railway sanctioned before the session of 1844, which are, therefore, excluded from the provisions of the Act. The following statement shows the companies to which these railways belong, and the length of each.

*Railways Authorised by Parliament to the end of the Session of 1843, and which are now Open.*

	Miles.	Miles.	Miles.
Birkenhead—			London and North-Western
Chester to Birkenhead .....	16		— <i>Contd.</i>
Bodmin and Wadebridge .....	14 $\frac{3}{4}$	West London .....	3
Bristol and Exeter .....	75	North Union .....	40
Caledonian—	Miles.	St. Helen's .....	10
Glasgow, Garnkirk, } and Coatbridge .....	10		— 405
Pollock and Govan .....	2 $\frac{1}{4}$	London and South-Western—	
Paisley and Greenock ....	22	Nine Elms to South- } ampton .....	78 $\frac{1}{4}$
Dundee and Newtyle ....	10 $\frac{1}{4}$	Bishopstoke to Gosport	15 $\frac{3}{4}$
Wishaw and Coltness ....	13		— 94
Dublin and Drogheda .....	57 $\frac{1}{2}$	London, Brighton, and South Coast—	
" Kingstown .....	32	London to Croydon .....	8 $\frac{3}{4}$
Dundee and Arbroath .....	7 $\frac{3}{4}$	Croydon, Brighton .....	42
Glasgow and South-Western—	16		— 50 $\frac{3}{4}$
Main line .....	51	Manchester, Sheffield, and Lincolnshire—	
Kilmarnock and Troon....	10	Manchester to Sheffield .....	40 $\frac{1}{2}$
Paisley and Renfrew.....	3	Maryport and Carlisle .....	28 $\frac{3}{4}$
Great Eastern—	64	Midland—	
London to Colchester ....	51	North Midland .....	73 $\frac{1}{4}$
Stratford to Newport ....	38	Midland Counties .....	58 $\frac{1}{2}$
Hertford to Ware .....	5 $\frac{1}{2}$	Birmingham and } Derby Junction ....	48 $\frac{1}{2}$
Yarmouth to Norwich ....	21	Sheffield and Rotherham	7 $\frac{1}{2}$
	— 115 $\frac{1}{2}$	Bristol and Gloucester	30 $\frac{1}{4}$
Great Western—	176	Birmingham and Glo- } cester .....	55 $\frac{1}{2}$
London to Bristol .....	118 $\frac{1}{4}$	Leicester and Swan- } nington .....	16
Didcot to Oxford .....	9 $\frac{3}{4}$		— 289 $\frac{1}{2}$
Swindon to Cheltenham	48	North British—	
	— 176	Edinburgh and Glasgow	46
Lancashire and Yorkshire—		Wilsontown, Mor- } ningside and Colt- } ness .....	8 $\frac{1}{2}$
Manchester to Nor- } manton .....	50	Edinburgh, Leith, and } Granton .....	4
Preston and Wyre .....	20	Monklands .....	36
Manchester and Bolton .....	11		— 94 $\frac{1}{2}$
	81	North-Eastern—	
Lancaster and Preston Junction	20 $\frac{1}{4}$	Brandling Junction ....	27 $\frac{1}{2}$
Llanelli .....	20 $\frac{1}{4}$	Durham .....	5
London and Blackwall .....	3 $\frac{1}{2}$	" and Sunderland	17 $\frac{1}{2}$
London and North-Western—		Great North of England	48
London and Birmingham	112 $\frac{1}{2}$	Hull and Selby .....	31
Grand Junction .....	83 $\frac{1}{4}$	Leeds .....	21
Liverpool and Manchester	31 $\frac{3}{4}$	Newcastle and Carlisle	65 $\frac{1}{4}$
Manchester and Bir- } mingham .....	30 $\frac{3}{4}$	Newcastle and Dar- } lington Junction .....	25 $\frac{1}{2}$
Chester and Crewe .....	21 $\frac{1}{4}$	*Pontop and South } Shields .....	24
Leamington Branch .....	8 $\frac{3}{4}$	York and North Mid- } land .....	27
Blisworth and Peter- } borough .....	47		
Aylesbury .....	7 $\frac{1}{4}$		
Kenyon and Leigh and } Bolton and Leigh....	9 $\frac{1}{2}$		

*Note.*—The railways marked thus \* being principally used for mineral traffic may perhaps not be considered passenger railways under the Act.

*Railways Authorised by Parliament to end of the Session of 1843—Contd.*

	Miles.	Miles.		Miles.	Miles.
North-Eastern— <i>Contd.</i>			Scottish North-Eastern—		
Newcastle and North Shields .....	7		Arbroath and Forfar .....	15	
Whitby and Pickering .....	23		South-Eastern—		
West Hartlepool—			Reigate to Dover .....	67	
Hartlepool .....	16		Canterbury to Whitstable .....	6	
Great North of England, Clarence, and Hartlepool Junction .....	8		Maidstone Branch .....	9 $\frac{1}{4}$	
*Clarence .....	37		Bricklayers' Arms Branch .....	1 $\frac{3}{4}$	
Stockton and Hartlepool ....	8		London and Greenwich .....	3 $\frac{3}{4}$	
	— 69	390 $\frac{3}{4}$			88 $\frac{1}{4}$
Preston and Longridge .....	6 $\frac{1}{2}$		Stockton and Darlington, including the *Bishops Aycland and Weardale Railway .....	69	
			Taff Vale .....	24	
			Ulster (Belfast to Portadown) .....	25	
			Total .....	2,320	

*Note.*—See note on previous page.

" This list includes (with the exception of the Great Northern Railway) the main lines of communication throughout England.

" It would therefore appear that if the State elected to purchase the railways, it would never, unless with the concurrence of the proprietors of the lines, become the possessor of the whole of the principal main lines of railway, such as the Great Eastern, London and North-Western, Great Western, and London and South-Western, but in these cases would become possessor only of numerous lines which (like the Trent Valley) are integral parts of the several systems; nor would the State at the present time become the owner of more than those lines, or parts of lines, or branches which were sanctioned during the years 1844 and 1845. In every succeeding year it would be entitled to take so much of the existing railways as was authorised in the twenty-first preceding year."

The following series of tables have been compiled in the Railway Department of the Board of Trade for Captain Tyler:—

TABLE I.—*Length of Railways Open, 1871.*

	At 31st December, 1871.
	Miles.
In England .....	10,850
," Scotland .....	2,538
," Ireland .....	1,988
In United Kingdom .....	15,376

TABLE II.—Comparison of Capital Paid-up, Average Interest thereon, Gross Receipts, and Working Expenditure, 1858, 1870, and 1871.

Year.	1			2	3	
	Ordinary.	Preference and Guaranteed.	Total.		Loans and Debenture Stock.	Total Capital Raised at 31st December.
	£	£	£		£	£
1858	181,837,781	61,854,547	243,692,328	{	Loans, 81,683,179	34,099 325,375,507
'70	229,282,150	158,692,084	387,974,234	{	Loans, 90,713,779 Debenture Stock, 51,220,660	34,106 529,908,673
'71*	230,250,152	*173,051,875	403,302,027	{	Loans, *82,095,545 Debenture Stock, *67,282,535	35,943 552,682,107

Year.	4					
	Guaranteed and Preference Shares.		Loans and Debenture Stock.		Total.	
	Rate.	Amount.	Rate.	Amount.	Rate.	Amount.
		£		£		£
1858	4·84	2,993,760	4·48 {	Loans, 3,659,406	4·63	6,653,166
'70	4·54	7,220,100 {	4·37 {	Loans, 3,968,100 Debenture Stock, 2,290,600	4·48	13,478,800
'71	4·51	7,816,202 {	4·25 {	Loans, 3,502,302 Debenture Stock, 2,937,540	4·42	14,256,044

Year.	5	6		7
		Gross Receipts from Railway Working.	Total (Railway) Working Expenditure.	
		Amount.	Proportion per Cent. to Gross Receipts.	Percentage of Net Receipts to Total Share and Loan Capital.
		£	£	
1858	†23,956,749	†11,738,807	49·0	3·75
'70	†43,417,070	†21,193,877	49·0	4·19
'71	†47,107,558	†22,632,046	48·4	4·43†

\* No interest whatever was paid upon 31,409,450*l.* of ordinary capital, or upon 8,139,701*l.* of preference stock, or upon 211,619*l.* of loans, or 743,174*l.* of debenture stock. The rates of interest are calculated upon the entire amounts whether paying interest or not.

† Exclusive of steamboat, canal, and harbour receipts and expenses.

‡ The average amount of dividends and interest upon the total share and loan capital, calculated at the rates stated in the annual return, is 4·68; that upon ordinary capital being 5·07. It would, however, appear that there is a duplication in the amounts returned, especially as regards ordinary capital, from the fact that above 15 millions have been subscribed by certain companies to certain other companies, and have been included in the returns both of the companies subscribing and of the companies receiving the subscriptions. The difference between these two figures of average—namely, 4·43 in the last column of the above Table, No. 2, and 4·68 as stated in the footnote to the following table, No. 3, is further due to the exclusion from the calculations on which the above column 7 is based, of the receipts and expenditure on account of navigations, harbours, steam-boats, &c.

TABLE III.—*Proportion of Capital in Relation to Rates of Interest Paid.*

Loans.		* Guaranteed Capital.		Preference Capital.	
Rates of Interest.	Amount at each Rate.	Rates of Dividend.	Amount at each Rate.	Rates of Dividend.	Amount at each Rate.
Nil	£ 211,619	Nil	£ Nil	Nil	£ 8,139,701
1½	1,400	2½	2,110,000	¼	4,694,183
3	21,000	3	713,825	½	15,000
3½	901,750	3¼	366,698	1	190,880
3¾	629,609	3¾	299,700	1¼	122,250
4	36,531,115	3½	160,576	1½	21,540
4⅓	20,020	3¾	125,000	2¾	45,300
4¼	17,168,758	4	9,616,865	2½	663,367
4⅔	35,200	4½	8,101,381	2⅔	2,603,742
4½	15,769,175	4¾	40,000	3	64,510
4¾	1,196,277	5	28,176,548	3½	75,000
4⅔	38,130	5½	1,309,084	3¾	221,840
4⅔	100	5¾	800,000	4	8,517,678
4½ and 5	45,871	5 2¾	260,050	4¼	904,149
5	8,748,220	5¾	156,250	4½	19,362,240
5 1/10	122,160	6	7,997,518	4¾	210,840
5 1/4	12,400	6¼	1,141,333	4¾	291,090
5 1/2	80,568	6¾	600,000	5	56,859,694
6	504,971	7	230,654	5¼	200,000
7	21,516	7 1/8	618,573	5 3/8	286,000
8	35,700	8	296,355	5 1/2	643,372
	82,095,559	9 1/8	440,570	6	2,170,592
Average Rate of Interest on Loans		9 9/10	700,000	6 1/2	57,938
		10	50,000	7	1,673,374
		10 1/8	200,000	8	227,500
		12 1/8	42,125	10	385,840
	4·25.	12 3/4	2,150	11 1/4	50,000
			64,555,255		108,496,620
			Total 173,051,870		

Average Rate of Interest on Guaranteed and Preference Capital, 4·51.

\* For Debenture Stock, see continuation of this table on next page.

TABLE III.—*Proportion of Capital in Relation to Rates of Interest—Contd.*

Ordinary Capital.				Debenture Stock.	
Rates of Dividend.	Amount at each Rate.	Rates of Dividend.	Amount at each Rate.	Rates of Interest.	Amount at each Rate.
Nil	£ 31,409,450	5 $\frac{1}{4}$	£ 10,590,784		£ 743,174
$\frac{5}{24}$	1,327,266	5 $\frac{3}{8}$	3,830,480	Nil	
$\frac{9}{20}$	127,700	5 $\frac{1}{2}$	9,988,191		
$\frac{11}{16}$	228,675	5 $\frac{5}{8}$	1,670,698	1 $\frac{3}{4}$	46,915
$\frac{5}{8}$	2,758,932	6	8,207,025		
$\frac{15}{16}$	98,210	6 $\frac{1}{4}$	883,440	3	310,863
$\frac{7}{8}$	106,373	6 $\frac{1}{2}$	64,787		
$\frac{3}{4}$	64,431	6 $\frac{3}{4}$	326,715	3 $\frac{1}{2}$	217,279
1	496,539	6 $\frac{7}{8}$	47,970		
1 $\frac{1}{5}$	70,600	7	13,110,395	4	26,056,126
1 $\frac{1}{4}$	9,640,654	7 $\frac{1}{8}$	6,765,810		
1 $\frac{7}{8}$	314,424	7 $\frac{1}{2}$	116,228		
2	1,049,181	7 $\frac{3}{4}$	30,932,199	4 $\frac{1}{4}$	3,978,397
2 $\frac{1}{4}$	612,536	7 $\frac{7}{8}$	14,471,191		
2 $\frac{2}{5}$	99,561	7 $\frac{17}{20}$	638,000	4 $\frac{3}{8}$	10,000
2 $\frac{1}{2}$	7,903,238	8	156,355		
2 $\frac{17}{24}$	1,169,840	8 $\frac{1}{8}$	60,000	4 $\frac{1}{2}$	18,692,653
2 $\frac{3}{4}$	5,514,693	8 $\frac{1}{4}$	1,159,275		
2 $\frac{9}{16}$	1,583,940	8 $\frac{13}{15}$	739,202	5	15,740,877
3	600,466	9	225,000		
3 $\frac{1}{4}$	4,031,180	9 $\frac{1}{8}$	17,020,394	5 $\frac{1}{2}$	4,000
3 $\frac{1}{2}$	3,397,977	9 $\frac{1}{2}$	350,000		
3 $\frac{3}{4}$	173,000	10	2,087,106		
3 $\frac{7}{8}$	100,000	10 $\frac{1}{4}$	37,000	6	1,482,251
4	3,121,840	11 $\frac{1}{4}$	550,950		
4 $\frac{1}{20}$	1,014,000	12 $\frac{1}{4}$	2,420,300		67,282,535
4 $\frac{1}{8}$	2,157,175	12 $\frac{3}{4}$	503,599		
4 $\frac{1}{4}$	433,488	12 $\frac{17}{20}$	30,000		
4 $\frac{3}{8}$	75,000	13	260,000		
4 $\frac{9}{20}$	4,469,219				
4 $\frac{1}{2}$	2,748,653		230,250,152		
4 $\frac{3}{4}$	417,795				
4 $\frac{15}{16}$	11,535,362				
5	3,431,677				
5 $\frac{1}{8}$	171,355				
	<i>continued</i>				
			Average Rate of Dividend on Ordinary Capital 5·07.		4·37.

*Note.*—The average rate of dividend or interest upon the whole, calculated upon the amounts, and at the above rates as given in the annual return, amounts to 4·68. See note to Table II.

TABLE IV.—Percentage Proportion of Capital Paid-up, Percentage of Net Receipts to Total Capital, and Average Interest on Preference and Loan Capital, 1858, 1870, and 1871.

Year.	Percentage Proportion.				Average Interest on Ordinary Capital.	Average Interest on Preferential Loan, &c., exclusive of Ordinary Capital.	Percentage of Net Receipts to Total Capital.			
	Ordinary Capital.	Preference Capital, Loan, &c.								
		Guaranteed and Preference.	Loan and Debenture Stock.	Total.						
1858....	56 {	Preference, 19	Loan, 25	{ 44	100	—	4.63			
'70....	43 {	Guaranteed and Preference, 30	Loan, 17 Debenture Stock, 10	{ 57	100	—	4.48			
'71....	42 {	Guaranteed and Preference, 31	Loan, 15 Debenture Stock, 12	{ 58	100	5.07	4.42			

\* See note to Table II.

TABLE V.—Comparison of Receipts.

(a). From Passenger Trains.

	Receipts from Passenger Trains.						Total by Passenger Trains.	
	Receipts from Passengers.					Excess Luggage, Luggage, Parcels, Carriages, Horses, Dogs, and Mails.		
	First Class.	Second Class.	Third Class and Parliamentary.	Holders of Season and Periodical Tickets.	Total.			
United Kingdom	1858 {	£ 3,002,838	£ 3,527,377	£ 3,616,192	£ 229,839	£ 10,376,246	£ 1,321,658	£ 11,697,904
	'70 {	3,948,812	4,925,542	7,473,727	686,488 {	17,034,569 * 4,673	2,262,669	19,301,911
	'71 {	4,148,108	5,167,535	8,115,304	781,778 {	18,212,725 * 3,853	2,406,002	20,622,580

\* Not classified.

TABLE V.—*Comparison of Receipts—Contd.*(b). *From Goods Trains, and Proportion of Receipts from Passenger and Goods Trains.*

	Receipts from Goods, &c. Trains.				Total from Passenger and Goods, &c., Trains.	Proportion of Receipts from Passenger and Goods Trains.		
	Minerals.	General Merchandise.	Live Stock.	Total Goods, &c., Trains.		Pas-senger.	Goods, &c.	Total.
	£	£	£	£		£	£	£
United Kingdom	1858	4,046,061	7,711,386	501,398	12,258,845	23,956,749	49	51
	'70	9,392,513	13,810,196	912,450	24,115,159	43,417,070	44	56
	'71	10,029,253	15,418,171	1,037,554	26,484,978	47,107,558	44	56

*Note.*—The receipts from rents, tolls, navigations, steamboats, &c., are not included in the above.TABLE VI.—*Comparison of Receipts per Mile of Railway Open from Passenger Trains, 1858, 1870, and 1871.*

	First Class.	Second Class.	Third Class and Parliamentary.	Mixed, Season Ticket Holders, and Excess Fares.	Total.	Excess Luggage, Parcels, Carriages, Horses, and Dogs.	Mails.	Total Receipts from Passenger Trains.	
	1858	322	379	386	25	1,112	94	47	1,253
In the United Kingdom	'70	254	317	481	44	1,096	102	37	1,235
	'71	259	336	528	51	1,184	118	38	1,340

TABLE VII.—*Comparison of Number of Passengers Conveyed, 1858, 1870, and 1871.*

	Passengers.				Holders of Season or Periodical Tickets.	Minerals.	General Merchandise.	
	First Class.	Second Class.	Third Class and Parliamentary.	Total.			Tons.	Tons.
United Kingdom	1858	18,302,384	41,693,289	79,145,464	139,141,137	52,562	25,654,620	47,469,676
	'70	31,839,091	74,153,113	224,012,194	330,004,398	156,403	—	—
	'71	35,642,199	81,021,940	258,556,615	375,220,754	188,392	*102,222,464	67,142,234

*Note.*—The tonnage returned is so incomplete, that it is impossible to give a total for 1870.

\* The tonnage of minerals in the case of the London and North-Western Railway is included in general merchandise.

TABLE VIII.—*Expenditure and Receipts per Train Mile for the Years 1858, 1870, and 1871, of the following Railway Companies.*

	Expenditure per Train Mile.						Receipts per Train Mile.			Proportion per Cent. of Expenditure to Receipts
	Mainten- ance of Way.	Loco- motive and Rolling Stock.*	Traffic Charges.	Rates and Taxes, Govern- ment Duty.	Miscel- laneous.	Total.	From Pas- senger Trains.	From Goods, &c., Trains.	Total.	
Bristol and Exeter ....	1858	d. 9·86	14·79	8·44	4·74	d. 5·18	42·01	79·80	142·52	93·09 46
	'70	7·09	11·53	11·91	3·35	1·71	35·59	68·47	86·86	74·25 48
	'71	7·22	11·07	11·96	3·25	1·51	35·01	70·01	81·30	73·87 47
Caledonian	1858	3·49	10·89	6·24	4·74	1·40	26·76	62·34	61·39	61·74 43
	'70	5·29	9·52	7·46	1·58	1·28	25·13	41·21	56·11	49·74 50
	'71	5·24	10·01	7·86	1·41	1·36	25·88	45·77	58·67	52·45 49
Dublin and Drogheda	1858	5·86	13·06	5·86	4·05	0·96	29·79	66·14	67·68	66·55 45
	'70	6·89	9·82	7·69	1·76	0·78	26·95	—†	—†	58·46 46
	'71	7·56	10·12	7·91	1·88	1·12	28·59	—†	—†	60·82 47
Great East- ern .....	1858	5·89	11·37	9·63	2·81	4·23	33·93	63·46	72·56	67·43 50
	'70	5·53	11·56	11·29	2·25	1·14	31·77	57·44	70·78	63·55 50
	'71	5·85	12·09	11·74	2·28	1·17	33·13	62·18	73·93	67·86 49
Great Northern	1858	5·19	11·27	7·69	1·98	3·12	29·25	53·64	58·63	56·29 52
	'70	5·22	9·94	9·82	1·76	1·18	27·92	54·39	59·53	57·28 49
	'71	5·53	10·34	10·33	1·83	1·07	29·09	58·52	59·33	58·99 49
Great Western	1858	6·27	8·62	3·94	3·10	7·28	29·21	68·78	69·91	69·16 42
	'70	5·55	10·43	10·24	2·02	1·65	29·89	61·15	65·67	63·43 47
	'71	5·57	10·32	9·92	1·90	1·61	29·32	63·26	64·54	63·97 46
Great South- ern and Western ...	1858	4·30	13·35	7·02	2·27	1·92	28·86	71·37	78·44	73·55 39
	'70	8·32	12·34	8·42	1·82	1·07	31·98	56·72	71·96	62·49 51
	'71	8·23	11·83	7·92	1·99	2·24	32·21	57·90	74·24	64·14 50
Lancashire and Yorkshire	1858	4·72	9·62	11·62	2·32	3·51	31·79	54·28	95·37	73·24 43
	'70	4·62	9·20	12·70	1·75	2·38	30·65	46·24	85·31	64·23 48
	'71	4·87	9·46	13·70	1·75	0·97	30·75	45·62	86·51	64·27 48
London and North- Western	1858	5·18	13·86	15·73	2·51	4·73	42·01	65·88	88·56	77·43 54
	'70	5·93	10·32	10·54	1·92	2·23	30·94	56·56	75·71	66·31 47
	'71	5·72	9·97	10·99	1·91	2·07	30·66	58·26	76·78	67·78 45
London and South- Western	1858	5·57	10·06	9·31	3·74	1·97	30·65	68·27	58·15	65·45 46
	'70	6·36	9·95	11·90	3·13	2·95	34·29	59·56	76·17	63·84 54
	'71	6·30	10·19	12·43	3·25	3·19	35·36	61·28	77·98	65·71 54
London, Brighton, and South Coast	1858	5·63	13·70	12·17	6·07	1·51	39·08	79·82	105·55	85·53 46
	'70	5·70	11·47	11·12	4·01	2·54	34·84	61·64	94·12	66·69 52
	'71	5·51	11·86	10·65	4·11	1·40	33·53	62·69	95·49	68·28 49
Midland ....	1858	4·19	11·61	6·33	1·67	2·67	26·47	50·96	70·37	61·67 42
	'70	4·50	8·82	8·94	1·37	0·81	24·44	41·59	60·07	52·31 47
	'71	5·32	9·06	9·82	1·38	0·98	26·56	46·58	65·85	58·24 46
North- Eastern	1858	3·09	11·16	4·37	2·31	1·66	22·59	57·17	50·24	52·71 42
	'70	6·08	13·99	7·28	1·76	0·76	29·87	49·17	74·70	65·55 46
	'71	6·31	13·69	7·65	1·73	1·03	30·41	51·64	74·21	66·46 46

\* There is no means of knowing in certain of the above cases whether shunting of engines is included by the companies in their returns from which the above table is taken.

† Mixed trains.

TABLE IX.—*Expenditure and Receipts per Train Mile and per Mile of Railway Open, for the whole of the Railways, and the Proportion per Cent. of Expenditure to Receipts.*  
 (a). *Per Train Mile.*

		Expenditure per Train Mile.							
		Mainten- ance of Way.	Locomotive and Rolling Stock.	Traffic Charges.	Rates and Taxes, Government Duty.	Miscellaneous.		Total.	
In England....	1858	d.	d.	d.	d.		d.		d.
	'70	5·48	12·29	9·29	4·26		2·50		33·82
	'71	5·73	10·80	10·35	2·13		1·67		30·68
,, Scotland....	1858	5·82	10·77	10·55	2·08		1·59		30·81
	'70	4·21	11·26	7·21	4·00		1·64		28·32
	'71	5·98	9·17	8·03	1·52		1·16		25·86
,, Ireland ....	1858	5·84	9·28	8·23	1·48		1·39		26·22
	'70	4·22	11·04	6·62	3·14		1·29		26·31
	'71	8·51	11·24	9·20	1·51		1·08		31·54
In United Kingdom....	1858	8·87	11·22	9·30	1·46		1·81		32·66
	'70								
	'71								
		Locomotive.	Rolling Stock.	Traffic Expenses.	General Charges.	Rates and Taxes.	Government Duty.	Compensation.	Legal and Parliamentary Expenses.
		d.	d.	d.	d.	d.	d.	For Personal Injury.	For Damage to Goods.
		5·89	7·92	2·63	8·64	1·35	1·32	*0·72	0·45
		5·98	7·96	2·65	8·92	1·28	1·28	*0·69	0·42
								d.	d.
								0·35	0·58
								0·33	0·63

		Receipts per Train Mile.					Proportion per Cent. of Expenditure to Receipts.	
		From Passenger Trains.	From Goods, &c. Trains.	Total.				
In England....	1858	d.	d.	d.				
	'70	60·08	73·90	66·44			50	
	'71	59·92	70·73	63·64			48	
,, Scotland....	1858	57·05	72·64	64·93			47	
	'70	57·30	69·97	64·24			44	
	'71	45·16	57·42	51·69			50	
,, Ireland ....	1858	44·36	59·43	52·58			50	
	'70	†57·18	†79·50	63·10			40	
	'71	†49·04	†87·95	60·36			52	
,, United Kingdom	1870	†48·78	†93·86	61·73			53	
	'71	53·46	70·20	61·63			49	
		54·99	71·35	63·13			48	

\* England and Scotland only.

† In many cases goods and passengers are taken by the same trains; the receipts, therefore, per train mile from goods and passenger trains on certain railways are necessarily to some extent inaccurate.

TABLE IX.—*Expenditure and Receipts per Train Mile and Mile of Railway Open—Contd.*  
 (b). *Per Mile of Railway Open.*

	Expenditure per Open Mile.							Receipts per Open Mile.			Proportion per Cent. of Expenditure to Receipts	
	Mainte-nance of Way.	Loco-motive and Rolling Stock.	Traffic Charges.	Rates and Taxes, Government Duty.	Miscellaneous.	Total.	From Pas-senger Trains.	From Goods, &c. Trains.	Total.			
	£	£	£	£	£	£	£	£	£			
In Eng-land ....	1858	248	556	421	113	192	1,532	1,468	1,538	3,006	50	
	'70	300	567	543	111	87	1,608	1,479	1,843	3,322	48	
	'71	329	610	597	118	90	1,744	1,609	2,063	3,672	47	
In Scot-land ....	1858	129	348	222	50	123	875	806	1,179	1,985	44	
	'70	216	331	288	55	42	932	707	1,140	1,847	50	
	'71	221	351	311	56	51	990	756	1,230	1,986	50	
In Ire-land ....	1858	72	189	113	22	53	451	706	354	1,060	40	
	'70	147	195	159	26	18	548	602	447	1,049	52	
	'71	161	203	168	27	33	592	630	488	1,118	53	
In United Kingdom	1870	260	361	119	391	61	59	36	21	1,357	49	
	'71	289	386	129	433	61	62	34	20	1,471	48	
			£	£	£	£	£	£	£	£		
		Locomotive.	Rolling Stock.	Traffic Expenses.	General Charges.	Rates and Taxes.	Government Duty.	Compensa-tion.	For Personal Injury.	For Damage to Goods.	Legal and Par-liamentary Ex-penses.	Miscellaneous.

TABLE X.—*Comparison of the Number of Locomotives, Carriages, and Other Vehicles, 1858, 1870, and 1871.*

	Loco-motives.	Carriages Used for the Conveyance of Passengers only.	Other Vehicles attached to Passenger Trains.	Waggons of all Kinds Used for the Conveyance of Live Stock, Minerals, or General Merchandise.	Any other Carriages or Waggons Used on the Railway not included in the preceding Columns.	Total of Vehicles excluding Locomotives.
	No.	No.	No.	No.	No.	No.
United Kingdom	1858	5,445	12,942	3,115	159,750	175,807
	'70	9,379	20,121	8,039	251,870	285,994
	'71	10,490	22,273	8,263	275,453	311,427
	Number per Mile.	Number per Mile.	Number per Mile.	Number per Mile.	Number per Mile.	Number per Mile.
United Kingdom	1858	.58	1.39	.31	17.14	18.84
	'70	.60	1.29	.51	16.20	18.38
	'71	.68	1.45	.53	17.91	20.25

TABLE XI.—*Estimated Extent of Land Held by Railways Open for Traffic in England and Wales, Scotland, and Ireland, on the 31st December, 1870.*

		Extent of Land.
		Acres.
In England and Wales .....	143,234	
„ Scotland.....	25,542	
„ Ireland .....	23,483	
Total in United Kingdom....	192,259	

*Note.*—The estimated average acreage of a lineal mile of railway is 12·97 in England and Wales, 10·14 in Scotland, 11·89 in Ireland, and 12·32 acres in the United Kingdom.

*Number and Length of Canals in England and Wales in the Year 1868.*

Number of canals.....	74
Length of canals or navigation .....	2,431 miles.

*Note.*—The gross amount of tonnage conveyed, in the year 1868, upon fifty-two of the above canals, having a mileage of 2,032 miles, was 23,320,832 tons. No returns were furnished for the twenty-two remaining canals.

*III.—Powers of State to Purchase Railways. Clauses of 7 and 8 Vict., Cap. 85 (9th August, 1844).*

WHEREAS it is expedient that the concession of powers for the establishment of new lines of railway should be subjected to such conditions as are hereinafter contained for the benefit of the public: Be it enacted, by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, that if at any time after the end of twenty-one years from and after the 1st day of January next, after the passing of any Act of the present or of any future session of Parliament, for the construction of any new line of passenger railway, whether such new line be a trunk, branch, or junction line, and whether such new line be constructed by a new company incorporated for the purpose or by any existing company, the clear annual profits divisible upon the subscribed and paid-up capital stock of the said railway, upon the average of the three then last preceding years, shall equal or exceed the rate of 10*l.* for every 100*l.* of such paid-up capital stock, it shall be lawful for the Lords Commissioners of Her Majesty's Treasury, subject to the provisions hereinafter contained, upon giving to the said company three calendar months' notice in writing of their intention so to do, to revise the scale of tolls, fares, and charges limited by the Act or Acts relating to the said railway, and to fix such new scale of tolls, fares, and

charges, applicable to such different classes and kinds of passengers, goods, and other traffic on such railway, as in the judgment of the said Lords Commissioners, assuming the same quantities and kinds of traffic to continue, shall be likely to reduce the said divisible profits to the said rate of 10*l.* in the 100*l.*: provided always, that no such revised scale shall take effect, unless accompanied by a guarantee to subsist as long as any such revised scale of tolls, fares, and charges shall be in force, that the said divisible profits, in case of any deficiency therein, shall be annually made good to the said rate of 10*l.* for every 100*l.* of such capital stock: provided also, that such revised scale shall not be again revised, or such guarantee withdrawn, otherwise than with the consent of the company, for the further period of twenty-one years.

II. And be it enacted, that whatever may be the rate of divisible profits on any such railway it shall be lawful for the said Lords Commissioners, if they shall think fit, subject to the provisions hereinafter contained, at any time after the expiration of the said term of twenty-one years, to purchase any such railway, with all its hereditaments, stock, and appurtenances, in the name and on behalf of Her Majesty, upon giving to the said company three calendar months' notice in writing of their intention, and upon payment of a sum equal to twenty-five years' purchase of the said annual divisible profits, estimated on the average of the three then next preceding years: provided that if the average rate of profits for the said three years shall be less than the rate of 10*l.* in the 100*l.*, it shall be lawful for the company, if they shall be of opinion that the said rate of twenty-five years' purchase of the said average profits is an inadequate rate of purchase of such railway, reference being had to the prospects thereof, to require that it shall be left to arbitration, in case of difference, to determine what (if any) additional amount of purchase-money shall be paid to the said company: provided also, that such option of purchase shall not be exercised, except with the consent of the company, while any such revised scale of tolls, fares, and charges shall be in force.

III. Provided always, and be it enacted, that the option of revision or purchase shall not be applied to any railway made or authorised to be made by any Act previous to the present session; and that no branch or extension of less than five miles in length of any such line of railway shall be taken to be a new railway within the provisions of this Act; and that the said option of purchase shall not be exercised as regards any branch or extension of any railway, without including such railway in the purchase, in case the proprietors thereof shall require that the same be so included.

IV. And whereas it is expedient that the policy of revision or purchase should in no manner be prejudged by the provisions of this Act, but should remain for the future consideration of the legislature, upon grounds of general and national policy: and whereas it is not the intention of this Act that under the said powers of revision or purchase, if called into use, the public resources should be employed to sustain an undue competition against any independent company or companies: Be it enacted, that no such notice as hereinbefore mentioned, whether of revision or purchase, shall be given until

provision shall have been made by Parliament, by an Act or Acts to be passed in that behalf, for authorising the guarantee or the levy of the purchase-money hereinbefore mentioned, as the case may be, and for determining, subject to the conditions hereinbefore mentioned, the manner in which the said options or either of them shall be exercised ; and that no bill for giving powers to exercise the said options, or either of them, shall be received in either House of Parliament, unless it be recited in the preamble to such bill, that three months' notice of the intention to apply to Parliament for such powers, has been given by the said Lords Commissioners to the company or companies to be affected thereby.

V. And be it enacted, that, from and after the commencement of the period of three years next preceding the period at which the option of revision or purchase becomes available, full and true accounts shall be kept of all sums of money received and paid on account of any railway within the provisions hereinbefore contained (distinguishing, if the said railway shall be a branch railway or one worked in common with other railways, the receipts, and giving an estimate of the expenses on account of the said railway, from these on account of the trunk, line, or other railways), by the directors of the company to whom such railway belongs, or by whom the same may be worked ; and every such railway company shall once in every half-year during the said period of three years cause a half-yearly account in abstract to be prepared, showing the total receipt and expenditure on account of the said railway, for the half-year ending the 30th day of June and the 31st day of December respectively, or such other convenient days as shall in each case be directed by the said Lords Commissioners, under distinct heads of receipt and expenditure, with a statement of the balance of such account, duly audited and certified under the hands of two or more directors of the said railway company, and shall send a copy of the said account to the said Lords Commissioners, on or before the last days of August and February respectively, or such other days as shall in each case be directed by the said Lords Commissioners, in each year ; and it shall be lawful for the said Lords Commissioners, if and when they shall think fit, to appoint any proper person or persons to inspect the accounts and books of the said company during the said period of three years ; and it shall be lawful for any person so authorised, at all reasonable times, upon producing his authority, to examine the books, accounts, vouchers, and other documents of the company, at the principal office or place of business of the company, and to take copies or extracts therefrom.

IV.—*Extract from Mr. Chubb's Letter to the "Times."*

As some criticisms in the public press on the financial view of the question advocated by Mr. Hammond Chubb, seemed to show that his remarks had been misunderstood ; a recapitulation of the

arguments he used was addressed to the Editor of the "Times," in a letter which was published in that journal on the 7th April, 1873:—

" Sums varying from 600 to 1,000 millions had been mentioned as the purchase price (of railways), and the example of the purchase of telegraphs by the State had been held up as a warning. I believe we may dismiss the millions from our minds; and those who desire the purchase of railways may find in the purchase of telegraphs their best encouragement.

" The very magnitude of the operation would of necessity render the arrangement a transfer rather than a purchase; and the real question is, Would the sum to be paid by the State as interest be greater than that which the companies are now paying in the shape of profits to their shareholders?

" The annuity to be paid is the point for consideration, and not the amount of stock to be raised.

" Taking the returns of 1871 (the principle is precisely the same whether applied to the figures of that year or to the larger figures of 1872), it is seen that railways have cost 552,000,000*l.*, and that the sum distributed as profits in that year was about 25,500,000*l.* Would this 25,500,000*l.* be exceeded if the railways were in Government hands?

" The subdivision of railway capital into the three classes of debenture stock, preference stock, and ordinary stock aids the inquiry materially. The proportions are as follows:—

	Capital.	Rate.	Interest.
	£	Per cent.	£
Debentures and debenture stock .....	150,000,000	4	6,000,000
Preference stock.....	173,000,000	5	8,650,000
	323,000,000		14,650,000
Ordinary stock .....	230,000,000	4·71	10,850,000
	553,000,000		25,500,000

" The position of a debenture stockholder is this. For 100*l.* he obtains, on a high-class guarantee 4*l.* a-year. He can receive no more; he should receive no less. Were his stock converted into Government stock, he would simply receive the same sum under a higher guarantee. Suppose his 4 per cent. stock converted into 3 per cent. stock, he would be credited with 133*l.* 6*s.* 8*d.*, which stock, at 90, he could sell for about 120*l.*, and the bonus he could thus obtain of nearly 20 per cent. would not be a cost to the State, but would represent the price at which the higher form of guarantee is valued in the stock markets.

" A very similar argument might be used in the case of preference stockholders, who, in good lines, are as assured of their interest as the debenture stockholders. As their credit is not so good, the bonus to them would be greater by the change; but,

placing the matter in the worst possible light, it is fair to assume that the State could not be called upon to pay more under this head than the companies pay now.

"Under these two stocks more than three-fifths of the total capital is provided for. It may be assumed that its transfer could be carried out, and that the cost to the State would not be greater than at present.

"There remains the 230,000,000*l.* of ordinary capital. Any estimate in regard to this must be of a speculative character. There are, however, two guides. The Act of 1844, applicable to a large part of this stock, gives at least the terms which the Government of that day thought fair. It is most probable the Commissioners of 1872 were right in saying that this could not be carried out in its integrity; and I am aware that, in the case of railways paying less than 10 per cent., arbitration may be resorted to. But applying the principle merely by way of test to only one-half of this capital, and taking the twenty-five years' purchase on the latest and highest year's profits, instead of on an average of the three last preceding years, it will be seen that a purchase could be carried out at a rate which would involve a saving of more than 1,000,000*l.* annually to the State in interest. If, however, this is but a speculation, as any estimate in regard to the ordinary capital must be, of necessity, we have the experience gained in the purchase of the telegraphs. Here the proprietors were paid off in cash, and the onus was thrown on them of finding other investments. But I believe I am right in saying that an income of 350,000*l.* at least, which it was fairly expected would increase rapidly, was purchased by the State for a sum which involved an annual interest of less than 220,000*l.*

"These are the grounds for believing that the outlay under the State for interest would not exceed that paid now in dividends. It will be admitted, too, I think, that I have by no means attempted to put the matter in a favourable light, and that I have used figures which cannot be cavilled at."

V.—*Violent Deaths in England connected with Railways, 1871.*

[Supplied by Registrar-General, and compiled chiefly from the findings of coroners' juries.]

Causes of Death.	All Ages.	Ages at Death.							
		1.	2.	3.	4.	Total Under 5 Years.	5—	10—	15—
Run over on the line { M. F.	700 53	2 —	2 1	2 1	4 1	10 3	19 5	35 8	70 2
Fall from carriage or engine { M. F.	40 6	— —	— —	— —	— —	— —	— —	— —	4 —
Collision { M. F.	24 6	— —	— —	— —	— —	— —	1 —	— 1	3 —
Carriage off rail, &c. { M. F.	11 2	— —	— —	— —	— —	— —	— —	1 —	1 —
Explosion of boiler { M. F.	1 —	— —	— —	— —	— —	— —	— —	— —	— —
Machinery of locomotive engine { M. F.	1 —	— —	— —	— —	— —	— —	— —	— —	— —
Crushed..... { M. F.	175 6	— —	— —	1 —	— —	1 —	6 2	14 —	31 —
Fall of heavy substance { M. ,, earth { F.	12 1	— —	— —	— —	— —	— —	— —	— —	1 —
Manner not stated, or otherwise than by the above causes { M. F.	78 10	— —	— —	1 —	— —	1 —	2 —	4 1	7 —
Total ..... { M. F.	1,042 84	2 —	2 1	4 1	4 1	12 3	28 7	54 10	117 2

Causes of Death.	Ages at Death.								
	20—	25—	35—	45—	55—	65—	75—	85—	95 and Upwards.
Run over on the line { M. F.	85 3	147 8	117 5	92 6	74 8	33 3	15 2	3 —	— —
Fall from carriage or engine { M. F.	4 2	12 —	3 —	7 1	6 2	4 1	— —	— —	— —
Collision { M. F.	3 4	5 1	4 —	3 —	5 —	— —	— —	— —	— —
Carriage off rail, &c. { M. F.	3 1	1 1	1 —	2 —	1 —	1 —	— —	— —	— —
Explosion of boiler { M. F.	— —	1 —	— —	— —	— —	— —	— —	— —	— —
Machinery of locomotive engine { M. F.	— —	— —	1 —	— —	— —	— —	— —	— —	— —
Crushed..... { M. F.	23 —	40 1	21 —	21 —	16 1	1 2	— —	1 —	— —
Fall of heavy substance { M. ,, earth { F.	2 —	3 —	3 1	2 —	— —	1 —	— —	— —	— —
Manner not stated, or otherwise than by the above causes { M. F.	7 —	24 3	14 2	9 2	6 —	3 2	1 —	— —	— —
Total ..... { M. F.	127 10	233 14	164 8	136 9	108 11	43 8	16 2	4 —	— —

*Violent Deaths in England and Wales, Resulting from Accidents on Railways, in each of the Years 1863-71.*

	Years									
	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	
Number of deaths, extracted from Board of Trade returns, including passengers and railway servants .....	—	—	—	24	28	53	—	—	—	—
	—	—	—	62	62	53	—	—	—	—
				86	90	106				
Total deaths registered as resulting from accidents on railways .....	647	796	947	908	877	797	791	930	1,126	
Males .....	607	745	885	837	822	714	735	861	1,042	
Females .....	40	51	62	71	55	83	56	69	84	
Passengers conveyed (millions)....	19	22	24	25	26	27	29	30	—	
Receipts (in 100,000 <i>l.</i> ) .....	20	22	23	24	24	24	25	25	—	

*On our NATIONAL PARLIAMENTARY ACCOUNTS, with SUGGESTIONS for  
ESTABLISHING a DOOMSDAY BOOK giving the VALUE of NATIONAL  
GOVERNMENTAL PROPERTY or ASSETS as the BASIS of a SOUND  
SYSTEM of ACCOUNTS, by which EXPENDITURE for CAPITAL and  
CURRENT ACCOUNT shall be separately SHOWN. By FRANK  
P. FELLOWS.*

[Read before the Statistical Society, April, 1873.]

THERE appears to me a great incompleteness in the manner in which our national governmental finance accounts are presented to Parliament. This I shall endeavour in this paper to point out, and to suggest a remedy for it.

The great incompleteness is this, that the Government of this great country do not and cannot tell the value of their assets. We do not know what we are worth in national governmental property, and till we *do* know this, I maintain that we can have no thoroughly satisfactory system of national financial accounts.

I will first proceed to point out how far I consider our accounts are fairly satisfactory, and for this purpose I must briefly state the course that is pursued in the House of Commons with regard to the accounts that are published.

The various Departments of Government prepare estimates of the sums that will be required for the public service for the forthcoming financial year.

The House of Commons goes through these estimates, and, with or without modifications and reductions, votes and authorises the expenditure of the money as estimated.

The documents which contain the proposed amounts are called the "Estimates." Thus there are—

- The Navy Estimates.
- The Army Estimates.
- The Civil Service Estimates, Classes I to VII, &c.

Soon after the end of the financial year (which is from 1st April in one year, to the 30th March in the next) accounts are presented to Parliament showing the amounts disbursed from the votes or sums authorised to be expended. These give in one column the amount voted or authorised to be expended, and in another the actual amount expended or disbursed, which is sometimes more and

sometimes less than the vote or sum authorised ; Treasury authority being required for any large excess of expenditure over the vote.

The Government, in my opinion, do fairly ascertain that the amounts as stated have been actually expended for the services for which they have been voted ; and, thus far, I consider our accounts are satisfactory.

But as a rule our accounts go no further. I consider, however, that much more than this should be done, if we are to know whether or not the money has been well spent, and that we have value for our money.

With this brief description of the course pursued, I proceed with my suggestions.

In papers read at various meetings of the British Association, I have with this view pointed out the desirability of Government having a valuation (or a Doomsday Book) of all its property, in land, building, ships, guns, stores, &c., of every description, and of Departments of Government, such as the Admiralty, War Office, and others, having (like railways or other public companies) both a capital and a current account; so that, in asking Parliament to vote money, they might be able to state how much was required for the current purposes of the year, and how much for increasing the capital (or the plant or stores) of the Department. Otherwise a sum, say 10,000,000*l.*, may be voted by the House and be expended by a Department, whilst the real expenditure for the current purposes of the year might be 9,000,000*l.* or 11,000,000*l.* That is to say, the capital of the Department, *i.e.*, its plant, stores, &c., may be increased in value by 1,000,000*l.*, thus leaving the real current expenditure only 9,000,000*l.*, or the capital may be decreased by 1,000,000*l.*, thus making the real current expenditure for the year 11,000,000*l.*, whilst at the same time the House of Commons and the public would be under the impression that only 10,000,000*l.* was so expended. I pointed out the uneconomical result that must occur under a system in which expenditure for capital and for current purposes is not clearly distinguished, and indicated that it would almost necessarily lead to insolvency in any public trading company, and that, therefore, it could not be well in a Government system.

I also pointed out at the Edinburgh meeting the desirability of our having (like the Conqueror) a Doomsday Book of national, as distinguished from governmental, property. This latter proposal of mine, though I consider it the least important of my suggestions, I am glad to find has been endorsed by influential public journals, such as the "Spectator," &c., and has been largely and ably advocated by Earl Derby, and there seems a fair probability of its being carried out successfully.

The object, however, of my principal proposal, *i.e.*, of having a

Doomsday Book giving the value of Government property, was to obtain a basis on which to build a good system of accounts for each Department, in which the capital and current expenditure shall be clearly distinguished. I may perhaps be allowed to state that, at the close of my paper at Edinburgh, the following resolution was moved by Sir John Bowring, seconded by Mr. Freeland, late M.P. for Chichester, and carried unanimously :—

"That this meeting having heard Mr. Frank P. Fellows's paper on a proposed Doomsday Book, giving the value of national Government property as a basis of a sound system of national finance and accounts, desires to urge upon the Government the great importance of the subject, and would strongly recommend that measures be taken to inquire into and report upon the question. This meeting desires further to express its opinion that each Government Department should have, like railway or other public companies, a capital and a current account, without which it deems it impracticable to have a reliable system of finance and accounts, and would suggest that a scheme of accounts should be introduced by which a unity may be established between the parliamentary finance and departmental Expense or other accounts, in order that the various sums voted by the House of Commons may be traced to their ultimate appropriation in statistical results, and so that greater control may be obtained over the national expenditure ; and that the President be requested to communicate this resolution to the Government authorities."

Thus far my proposals have had the emphatic endorsement of the Statistical Section of the British Association. I now proceed to indicate still further what I consider to be essential to a good system of national accounts, based upon the principle that capital and current expenditure shall be shown separately.

As before stated, the commencement of our present national accounts are the estimates of sums required for the forthcoming year by the various Departments of Government. I consider this should be accompanied with a statement of the value of the property each Department possesses ; and what each Department proposes to expend from the money asked for—

- 1st. For increasing the permanent capital ;
- 2nd. For ordinary current purposes of the year.

With this exception, I think the principles adopted with regard to our finance or cash accounts sound, and no radical alteration required.

The money is voted by the House of Commons (as stated) in the Estimates.

At the end of the year, accounts, called appropriation accounts, and statements of the surpluses and deficits on the grants, are published, which show for each vote and subhead of each vote how much of the money so voted has been expended, and explanations are given of any excess or deficiency.

The cash thus expended in payment of salaries, wages, for buildings, purchase of stores, &c., is fully accounted for and audited; and so far the House of Commons sees that the money that has been disbursed has been so disbursed for the purposes intended, and the salaries, wages, &c., have actually been paid to the proper recipients.

Hence, so far as concerns the payment of cash to the proper recipients and for the purposes intended, an efficient check is established, and the method of rendering these accounts and auditing them for all Departments may be said to be practically uniform.

Directly, however, that we leave these finance accounts of Parliament, and proceed to examine the various departmental Expense, Manufacturing or other accounts, annually or otherwise presented to Parliament, we find every variety of practice existing, and no uniformity of method prevailing in the several Departments. Each Department prepares such accounts without reference to any other Department; and (except in one case, the Admiralty) apparently with little reference, so far as can be traced in the public accounts, to the finance accounts of Parliament, *i.e.*, the accounts which state the money each Department has received from the votes of the House.

I consider, and lay it down as an axiom, that there can be no perfect accounts (Expense, Manufacturing, &c.) which do not begin with and include on the debtor side two items at least—

- 1st. The value of capital or stock at the beginning of the year;
- 2nd. The money, or money's value, received from Parliament and other sources.

And such accounts should end on the creditor side in like manner—

- 1st. The value of the capital or stock at the end of the year;
- 2nd. The results in ships built or goods manufactured, or disbursements in any other way.

The first, as to capital and stock, would be dealt with, and would become part of the proposed Doomsday Book.

As to the latter point, on which I lay great stress, *i.e.*, beginning every Expense and Manufacturing account with the money received from Parliament, I consider that there can be no true account which does not begin thus with the money that has been received.

All accounts which do not begin thus, and which do not perfectly account for the money received in the results of ships built, repaired, or maintained, or goods manufactured, plus or minus the difference of stock, &c., at the beginning and end of the year, are not *accounts*, strictly speaking, but merely statistical abstracts, and may be made to show anything the compiler pleases. We, therefore, I think,

ought eventually to insist on every Department commencing its accounts—

1st. With its capital or stock (*i.e.*, assets) at the beginning of the year.

2nd. With the money it has received from Parliament, shown in such a way that it may be traced in the parliamentary finance accounts, *i.e.*, estimates and appropriation accounts.

3rd. What it has received in *value* in any way from any other sources.

Then, on the creditor side, it should show what it has done with this, so that Parliament can see if it has had *value* for its money (not merely that the money has been paid to the proper recipients, &c.); and finally, what is the value of the capital or stock, &c., remaining.

Most departmental accounts may, perhaps, for the sake of illustration, be regarded in three aspects :—

1st. Cash accounts.

2nd. Store accounts.

3rd. Expense accounts.

The 1st, Cash accounts, I consider are right in principle, in the main, for all Government Departments, and require no radical alteration. They are audited, and it is clearly seen that the money is accounted for in salaries or wages paid, and stores bought, &c.

But is it not as necessary to account accurately for stores consumed (which is money's value) as for money itself?

And is it not equally necessary to deal with the value of these stores, &c. (as well as their quantity) as, otherwise, gold may be used where iron would suffice; or expensive and skilled labour may be used for purposes for which inexpensive or unskilled labour would do equally well or perhaps better.

The 3rd, or Expense accounts, would thus deal with the application of labour and materials, and the results thereof. As a matter of fact, however, the 2nd and 3rd, *i.e.*, Store accounts and Expense accounts, are so intimately connected, that they cannot be entirely separated, and must more or less dovetail into each other.

To illustrate the necessity of these Expense accounts (if we are to pretend to control expenditure at all), I may mention that, in the years 1863-64, 1864-65, 1865-66, I discovered, and Mr. Seely mentioned in the House of Commons, instances of about twenty to thirty ships that had been repaired by the Admiralty in those years, the cost of such repairs being about equal to the sum for which similar new ships could have been bought. Now, it is a rough rule with shipbuilders that an old repaired ship, after repair, is worth about half as much as a similar new ship, so that in these cases the

ships when repaired were only worth about half as much as the cost of their repairs, or there was a loss of from 250,000*l.* to 500,000*l.*

By the present Admiralty Expense accounts, and the use that is made of them, this cannot occur now.

Before the present system was introduced, if a ship required repair, she was repaired without the perfect information now afforded, and large sums were spent on old and obsolete vessels. Now that we have correct and detailed accounts of the cost of the building, and of each successive repair of every ship, before any ship is repaired, an estimate of the cost of such repair is made, the whole financial history of the ship is compiled, showing her original cost, and the date and cost of each repair. It is then decided, considering her age, what she has previously cost in repair, and what it will cost to repair her again, whether or not she shall be repaired or sold, or broken up. Thus it is almost impossible for cases like those instanced by Mr. Seely to occur now. (A list of some of these are given in the appendix to the Report of Mr. Seely's Committee of 1868.)

We have seen that the Government may, 1st, have a perfect audit of cash; 2nd. A perfect audit of stores as to quantity; *i.e.*, they may see that the stores said to have been used in repairing a ship have been really so used; and yet, through not having the third class of accounts, *i.e.*, Expense or Statistical accounts, all this mal-application and waste of money may occur. Unless we finally see what has been the total cost of, say repairing, a ship (and this cannot be done through mere finance accounts and store (*i.e.*, as to quantity) accounts), we have no real check on expenditure; and, after all our trouble we have a hole in the bottom of our pocket through which the money may go, notwithstanding that we have been very careful in counting it beforehand.

The same observations are applicable, more or less, to other Departments of Government. Indeed, accounts (unless they show the results of expenditure), only give a false security.

If, in large concerns, whether public or private, a few hundreds may be lost in cash through theft or false accounts, thousands, aye tens of thousands, may be wasted through mal-administration; and this simply because the heads of Departments have not the information to enable them to know of and check it.

To control a Department as to expense, without having Expense and Statistical accounts, appears to me like trying to drive a coach and four without reins; and to object to such accounts because of the cost of the clerical labour involved, appears to me about as wise as refusing to buy reins because of their expense, and thus electing to let the coach and horses take their own way without guidance or control.

In the Admiralty we have complete Expense accounts proceeding directly from the Navy Estimates, for about 5,000,000*l.*, or half of our annual expenditure, and we have thus the most perfect check and control over this 5,000,000*l.*; by the existence of which check I can prove from our accounts that we have saved, and are saving, many thousands of pounds yearly.

From 1864 to the end of 1868, when Mr. Childers asked me to accept a post at the Admiralty, I was engaged with Mr. Seely, the Member for Lincoln, in investigating the Finance and other accounts of Government, particularly those of the Navy, Army, and India, but more especially those of the Navy, the results of which investigation Mr. Seely from time to time brought before the House of Commons; and he and I, on various occasions during that period, had interviews with their Lordships of the Admiralty or permanent officials with reference thereto, at which we urged our views. During this period I have been engaged at the Admiralty on such matters from a day to a fortnight at a time.

Not succeeding in getting our views entirely adopted, Mr. Seely, in 1868, moved for, and obtained, a Committee of the House of Commons (of which he was appointed chairman) to inquire into and report upon "Admiralty Monies and Accounts." This Committee consisted of the following Members:—

Mr. Seely ( <i>Chairman</i> ).	Sir Daniel Gooch.
Lord Henry Lennox.	Mr. Stansfeld.
Major Anson.	Mr. Ayrton.
Mr. Dalglish.	Mr. McLaren.
Mr. Liddell.	Mr. Candlish.
Mr. Frederick Stanley.	Mr. Dyke.
Mr. Childers.	Mr. Scourfield.
Mr. Weguelin.	Sir John Hay.
Mr. Hanbury Tracy.	Mr. Du Cane.

Though the Chairman's special Report was not the one finally adopted by the Committee, the views contained in it were recommended by the Committee; and as his Report enters into the subject more at length than the one proposed by Mr. Childers, which was eventually adopted, I think I cannot do better than quote extracts from it, as they contain my own views, and will throw light upon the subject.

Naturally, since my appointment to the Admiralty, I have endeavoured to promote these views, and hence a sketch of what we have been and are doing there will indicate also to a great extent what I would have done elsewhere, and will be an exemplification of the advantages that may reasonably be expected if adopted in other Departments.

Extracts from the Draft Report proposed by the Chairman, Mr. Seely. (See "Report," No. 469, Sess. 1868, pp. xv and xvi.)

"Your Committee have considered the forms of the Navy Estimates and Accounts, and find that the Estimates do not sufficiently inform Parliament of the intended application of the monies proposed to be taken; that the accounts do not show correctly what has been the actual cost of the construction, equipment, and maintenance of ships in each Yard; and that there is not sufficient connection between the Estimates and Accounts to admit of an effective comparison of the sums voted with the results produced.

"We find in particular that, under the present system of accounts, it is impossible to ascertain with accuracy what has been the true cost of any particular vessel built, repaired, or maintained in one of Her Majesty's Dockyards, with a view to its comparison with the cost of a similar ship in another of the Dockyards, or in a private establishment; and that this defect results principally from the three following causes:—

"By the present system of general rate-book prices, articles manufactured in a Yard, and used in a ship in the same Yard, are charged to the ship not at their real cost, nor even at their apparent cost in that Yard, but at a price averaged from all the Yards, so that although the real cost of similar articles varies at the several Yards, often to a considerable extent, and not unfrequently by as much as 90 or 100 per cent., yet their assumed cost as charged to ships is alike in all the Yards. It results that a ship built at a dear Yard, and a similar ship built at a cheap Yard, will appear to have cost the same sum, so far as regards the manufactured articles used in them, although in fact some of these articles may have cost twice as much in the one as similar articles cost in the other ship.

"The indirect charges of the several Yards, that is to say, all expenses other than wages of workmen employed on the ships and materials used for ships, are not charged to the ships in the Yard in which they arise, but are added together and then apportioned, on the analogy of the rate-book system, over all the Yards according to the amount of wages and of the gross issues of materials in them, irrespectively of the real expenditure of this kind, so that the apparent cost of a ship built or repaired at Portsmouth is enhanced by a share of the cost of an expensive Dockyard staff at Malta.

"It appears to your Committee that, by reason of these imperfections, no article can be said to have been charged correctly to a ship, nor can the total cost of any ship be accurately ascertained.

“ Your Committee are of opinion that in any system of Navy Estimates and Accounts which is to enable Parliament to form a correct judgment respecting the prudence of the proposed or actual application of moneys, the following principles must be embodied in them, that is to say :—

- “ 1. The Estimates ought to show in the margin of each vote “ the amount proposed to be applied to shipbuilding and “ maintaining purposes in each Dockyard separately ; and “ the Savings and Deficiencies account ought to show for “ each Dockyard separately the amounts drawn and expended “ by it under each vote.
- “ 2. Every expense connected with the manufactories of each “ Yard ought, so far as is possible, to be charged to the “ products of such manufactories ; every such product “ when used in a ship in the Yard ought to be charged to “ the ship at such actual cost, or at an average actual cost, “ ascertained by a separate rate-book for the Yard.

“ Your Committee have further considered the form in which the Estimates and Accounts to be framed on these principles should be submitted to Parliament. Three forms have been submitted to us ; the first furnished to the Admiralty, at the request of your Committee, by its Chairman, before Easter ; the others, consisting of modifications of that form, presented to us by the Controller of the Navy and the Accountant-General at a late period of the Session.

“ The Controller of the Navy and the Accountant-General agree in the main with the principles on which the form of accounts proposed by the Chairman of your Committee is based. They admit the desirability of connecting more closely the Estimates with the accounts, and the Finance accounts with the accounts of Expenditure, and of separating completely the accounts of the several Dockyards.

“ The Accountant-General objects in some unimportant particulars, and the Controller of the Navy to a greater extent, to the manner in which these principles may best be carried out. We have considered these differences, and have taken evidence upon them, and are of opinion, with the Accountant-General’s Department, that the form proposed by the Controller presents difficulties which cannot easily be overcome. We think that the form proposed by the Chairman of your Committee, and which is appended to our Report (see Appendix 15A), is, with the modifications suggested by the Accountant-General’s Department, best adapted to attain the ends desired ; and we recommend its immediate adoption.”

The actual recommendations of the Committee were as follows:—

P. v, par. 13. “Your Committee proceed to deal with the form “of Estimates: and it appears to them that the existing arrangements, altered in the manner proposed by the Chairman of your Committee, with the modifications of the Accountant-General, will “meet all the requirements of Parliament, and will in no way interfere with the existing system of Audit.”

Par. 14. “The Appropriation Account, and the Statement of “Savings and Deficiencies, will follow the form of the Estimates.”

As to other Naval Accounts the Committee say generally:—

P. iv, par. 10. “Your Committee concur generally with the views “expressed by the Accountant-General of the Navy, after consideration by him of the principles embodied in the proposals made by “the Chairman of your Committee.” (See “Report,” No. 469, Sess. 1868, pp. 362, Qy. 5671, &c.)

From this it will be seen that, as regards the materials bought (with some few exceptions), as regards the articles manufactured in the Yards, and as regards all the indirect expenditure of the Yards (*i.e.* Incidental Expenses and Establishment Charges), all Her Majesty’s Home Dockyards (Deptford, Woolwich, Chatham, Sheerness, Portsmouth, Devonport and Keyham, Pembroke and Haulbowline) were treated as one Establishment; the only item differently dealt with being the actual labour employed in and upon specific ships.

Thus, a ship built at Yard A, and costing in these respects 80,000*l.*, and a similar ship built at Yard B, similarly costing 120,000*l.*, would each be given as costing 100,000*l.* So that the economy of Yard A would thus be made to pay for and to hide the extravagance and excess cost of Yard B. This system, consequently, had anything but an economical tendency.

It will be found also that a ship calculated—

	£
As in the accounts of the Admiralty up to 1859-60, } and costing .....	100,000
Would, according to their accounts from 1860-61 to } 1863-64 be given as costing .....	120,000
And as in accounts for 1864-65 .....	140,000
,,   '65-66 .....	160,000

and there were no means by which Members of Parliament or others, from the accounts presented to them, could tell what was or was not included in such given cost. Hence the constant debates and disputes as to the cost of this or that vessel.

Two new principles were recommended by Mr. Seely and myself to obviate these evils, and have since been adopted.

The first was to treat in our Expense, Manufacturing, Statistical, and other Accounts, each Dockyard and each manufactory as a separate establishment, as if each were the only Dockyard and manufactory carried on by the Admiralty.

By these means the results of one Yard could be compared with those of another, and an extravagant Yard be called to account, greater efficiency and economy being the inevitable results.

The second principle was to connect the three previously-apparently distinct and unconnected sets of accounts, viz.:—

a. Estimates and Appropriation Accounts, and Statements of Savings and Deficiencies on the Grants;

b. Ships' Expense Accounts;

c. Manufacturing Accounts;

and make them practically one account.

The first principle was carried out by the indirect expenses of each Yard being shown distinctly as appertaining to that Yard. Such of these expenses as were considered proportionately chargeable to ships built or repaired at a Yard being shown against that Yard's ships. Such expenses as were considered to be national in their character, and not chargeable against ships, being so shown, and always as appertaining to the particular Yard where they were incurred.

It was also further and more mainly carried out by establishing a separate rate-book for each Yard, by which the ships at any Yard would be charged at the average cost at such Yard for articles bought for and manufactured at it.

I shall hereafter show to some extent the economical results in money amounts that have, in my opinion, resulted from the adoption of this principle through the means described above.

The second principle, *i.e.*, connecting the three sets of accounts, was carried out by means of my Retabulation of the Navy Estimates, Appropriation Accounts, and Statements of Surpluses and Deficits on the Grants.

By these Retabulations the amounts to be voted in the Navy Estimates and disbursed as shown in the Appropriation Accounts and Statements of Surpluses and Deficits (these Retabulations being additions to these accounts), are finally thrown into eight great divisions, Nos. 1 to 8, representing heads of service.

A Departmental Report of mine of 1869 (when I first proposed the complete plan), quoted in the Report of the Accountant-General of the Navy preceding the Retabulation of the Navy Statement of Surpluses and Deficits on the Grants, explains more generally the intention of the proposal, and I therefore quote it now.

"Retabulation of the Navy Statement of Surpluses and Deficits "into Divisions representing Heads of Service, with the view of

“ enabling Final Expense and Manufacturing Accounts to be compiled, so as to be in accord with the Estimates, Appropriation Account, and Statement of Surpluses and Deficits, in order to make the previously varied and apparently unconnected Naval Accounts into one great account.

*“Explanation.*

“ In 1869 a complete Retabulation of the Navy Estimates was worked out departmentally, in order to connect, more completely, the Navy Estimates, Appropriation Account, and Statement of Savings and Deficiencies, with the Ships’ and Victualling Expense and Manufacturing Accounts, or any other Expense or Statistical Accounts that might in future be prepared and published.

“ The Report on this Retabulation of the Navy Estimates above referred to (and it is applicable to this account) explained as follows :—

“ ‘Division 1. Naval Yards,’ brings together into one view all the amounts of the various Votes appertaining to the Building, Repair, and Maintenance of the Fleet and Coast Guard, including Salaries, Wages, Stores, all New Buildings and Machinery, and Repairs to the same, Civil Pensions to Officers and Artificers who were previously employed in connection with such duties ; and this Division would represent the money the House of Commons had granted to the Admiralty to use in their capacity of ship-builders like Napier and Laird, and shipowners and users like Cunard and the Peninsular and Oriental Company, and will be accounted for in our Expense and Manufacturing Accounts under the head of Division 1, Naval Yards.

“ ‘Division 2. Victualling,’ in like manner deals with the Expense of Victualling the Fleet, Coast Guard, &c.; and Victualling Expense and Manufacturing Accounts will deal with and account for expenditure under this Division.

“ It is proposed to compile accounts for the other Divisions ; at any rate, the money will be accounted for at once in the Appropriation and Savings and Deficiencies Accounts in the same form and detail as to Divisions, as in this Retabulation.

“ ‘Division 8. Control,’ (strictly Central Control) includes Vote 3, Administrative, and part of Vote 5, Scientific, and that part of Vote 13, Martial Law and Law Charges, which appertains to the central control of the whole of the other Divisions. It includes also all New Works and Repairs for Admiralty Offices, and the Pensions of Officers who were employed in the central administration and control of the Navy. It is considered that this central administrative, scientific, and legal Division, though essential to the due control of the Navy and Naval Establish-

" ments all over the world, yet exists in a great measure also for " Parliamentary and National purposes, for giving varied and " valuable information, and that it therefore bears little analogy " to the expense of the management of a large mercantile establish- " ment; and as it would be difficult, if not impossible, to apportion " the amount accurately to the several Divisions, and to say how " much is chargeable to each, even if it were admitted that it was " fair under the circumstances to do so, a separate Division is given " for these items of expenditure.

" Another addition made in this Retabulation, and which will " be carried through into the subsequent accounts, is that each " Naval Yard and each Victualling Yard is treated as a separate " establishment, and stands upon its own merits; and each Yard " will account for the money that has been disbursed on its behalf " in final Expense and Manufacturing Accounts, debiting itself " with such money in the same form and manner as in this " Retabulation, and accounting for it in Ships Built, Repaired, and " Maintained, or in Victualling Stores converted, or issues from " each Yard, of Stores, whether converted or not, to Ships and " Services. Page — to — show this for Naval Yards, Division 1, " and pp. — for Victualling Yards, Division 2. With respect to " the Victualling Yards, there is an additional column for credits. " This is necessary, because these various credits do not appertain, " and cannot therefore be attributed, to special Yards.

" The explanation in the foregoing Report on the Retabulation " of the Navy Estimates will sufficiently explain the object of the " Retabulation of the Statement of Surpluses and Deficits."

" In order to subdivide the votes into Divisions it was necessary " that each vote should be analysed, and that it should be ascer- " tained how much of each vote was chargeable to the several " Divisions, and to the subdivisions of each Division. Hence, at " pp. — are given the results of this analysis."

" In like manner the other Votes, 2 to 17, are analysed, and the " results to be posted against each Division and subdivision obtained.

" The Retabulation is intended to form the Dr. side for future " Expense, Manufacturing, or Statistical Accounts.

" It further shows the actual amount disbursed on each Division, " subdivision, Yard, &c., from the subhead of each Vote.

" Expense Accounts on this basis for Division 1, Naval Yards, " and Division 2, Victualling, have been already presented to " Parliament."

Thus the Admiralty Estimates, Appropriation Accounts and Statements of Surpluses and Deficits, Ships and other Expense and Manufacturing Accounts—are all connected, and simply form parts of one great account; and I maintain, in like manner, that the

accounts of all other Departments ought to be similarly connected, so as eventually to form part of one great national account.

I now proceed to indicate in some measure, by figures, the money value that has accrued to the nation through these and similar reforms. I shall commence this part of my subject by giving the total yearly expenditure for Her Majesty's Navy for ten years previous to Mr. Childers' administration, and the adoption of these and other changes, compared with the annual expenditure since that period, and shall then give some specific examples and figures by which we may more clearly see how, in some measure, such results have been brought about, and what an important part the question of accurate, well designed, and comprehensive statistics and accounts have played in bringing to light, and hence checking, waste and extravagance.

I think it will be generally admitted that Her Majesty's Navy, during the past four years, has been at least as efficient, both absolutely, and relatively to other Powers, as during the ten years preceding these changes; and if so, and if, as I maintain, we get as much work done, and are protected as efficiently as formerly, then this work, which formerly (during the ten years) cost the nation an average yearly expenditure of 11,587,041*l.*, has, during the past four years, been done for about  $1\frac{3}{4}$  millions yearly less—or for about  $9\frac{3}{4}$  millions yearly, instead of 11,587,041*l.*

The figures are:—

	£
1859-60, Expenditure .....	12,761,668
'60-61       ,,	13,122,570
'61-62       ,,	13,542,122
'62-63       ,,	11,829,786
'63-64       ,,	10,746,177
'64-65       ,,	10,670,017
'65-66       ,,	10,268,215
'66-67       ,,	10,525,354
'67-68       ,,	12,768,162
Deducting Abyssinian expenditure	1,425,364
	<hr/>
	11,342,798
1868-69, Expenditure .....	14,069,384
Deducting Abyssinian expenditure	3,007,680
	<hr/>
	11,061,703
Ten years' total.....	115,870,410
Average yearly expenditure ten years previous } to 1869 .....	11,587,041
	<hr/>

	£
1869-70, Expenditure .....	10,102,641
Deducting Abyssinian expenditure....	321,140
	<hr/> 9,781,501
1870-71, Expenditure .....	10,087,412
Deducting Abyssinian expenditure....	170,668
	<hr/> 9,916,744
1871-72, Expenditure .....	9,875,981
Deducting Abyssinian expenditure....	49,523
	<hr/> 9,826,458
1872-73, Estimate, with supplementary votes, } expenditure not yet given .....	} 9,532,149
1873-74, Estimate .....	9,872,725
	<hr/> 48,929,577
Total five years.....	<hr/> 9,785,915
Yearly average .....	<hr/>

These great results—and it is a great thing for the nation to have a service which originally cost annually over  $11\frac{1}{2}$  millions performed as efficiently for  $9\frac{3}{4}$  millions, thus saving the country during the past four years about 7 millions sterling—I repeat, these great results have been brought about by a variety of means—not the least efficient being the check our improved accounts have given us over expenditure, or, what is still more important, over the final results of expenditure.

Thus, as I have pointed out, by the means now adopted all our expenditure in the repairs of ships is effective. Again, it not only enables the Heads of Departments to come to a wise decision, and to have no expenditure that is ineffective; but by pitting one Yard against another, by comparing the results of productions of Yard A with that of Yard B, the utmost economy of manufacture is obtained, and a wholesome rivalry between the Yards established.

These comparisons are made systematically, and reveal at times very curious results.

Thus, we may find that the excess cost of any article at Yard A over that of Yard B is caused by skilled labour being employed at Yard A while unskilled labour would suffice—by men doing boys' work, or by the articles being produced at the wrong shops; in fact, as it were, by the watchmaker being set to make a horseshoe and the blacksmith a watch. As regards materials, also, we find perhaps expensive instead of inexpensive materials used; and without these accounts, and the statistical analyses that are made of them, it would be more difficult to ascertain and consequently to check this.

It is difficult to estimate accurately the exact saving thus effected, but I think some idea may be formed of the great advisability of having the most accurate information and figures, when I say that our shipbuilding and manufacturing expenditure amounts

to from 3,000,000*l.* to 4,000,000*l.* yearly, of which from 1,000,000*l.* to 1,750,000*l.* yearly consists of articles made or converted in the manufactories, shops, factories, &c. (numbering about 160), of the Yards, and that our victualling and manufacturing expenditure amounts to between 1,000,000*l.* and 2,000,000*l.* yearly, making a total of about 5,000,000*l.* yearly. Of course, in this I include the staff that supervises this expenditure, as it depends in a great measure upon this staff whether or not we get value for the outlay.

Taking, however, one set of items of expenditure from the published accounts—such expenditure being to a great extent stationary, and not being very greatly affected by the increase or decrease in the tonnage of ships built or repairs executed—viz., that part of the Indirect Charges of the Dockyards called Incidental Expenditure, and which consists of the indirect labour and materials used in the Yards, *i.e.*, labour and materials which have not been and cannot be attributed to any particular article manufactured or ship built and repaired, but which are general to the whole of the operation of the Yards, and which I have described as having been formerly lumped together for all Yards, and then distributed at uniform rates of percentage on each and every ship, I find these results. These expenses are classed under twenty-seven distinct heads. Excluding therefrom the heads Depreciation or Improvement in the value of timber or stores, which are affected by a variety of causes, such as the rise and fall in the market price, condemnations, errors in issue, &c., and which, therefore, would invalidate the comparison—the expenditure (I give only thousands) which, for the Home Yards—

	£
For 1867-68, <i>i.e.</i> , from 1st April, 1867, to } 31st March, 1868, was .....	} 464,000
For 1868-69, <i>i.e.</i> , from 1st April, 1868, to } 31st March, 1869, was .....	} 391,000

has been reduced in 1869-70, 1870-71, and 1871-72, to about 310,000*l.* per year.—See “Navy Shipbuilding and Dockyard Transactions,” presented annually to Parliament, from which these figures are abstracted.

Though a part of this great saving is to be attributed to the closing of Woolwich and to the abolition of Deptford as a shipbuilding Yard, and to our doing the work at the remaining Home Yards, by far the greater portion arises from an actual and large reduction in the expenditure at these latter Yards, notwithstanding that they have to do the work previously done at Woolwich and Deptford; and I attribute the greater part of this saving to the fact that we have since 1868-69 treated each Yard as a separate establishment, and have compared results and pitted one Yard against another.

Though the accounts for 1866-67 and 1867-68 have since 1868-69 been compiled for Parliament on the principle of treating (in these accounts) each Dockyard and each manufactory as a separate establishment, so that the results of one Yard might be compared with those of another, it was not till 1868-69 (in consequence of the recommendation of the Select Committee of the House of Commons of 1868) that the new system was brought into operation, and the Yards knew that the information would be so tabulated that these comparisons could be instituted.

Hence I regard the results shown in 1867-68 as the results obtained under the old system, by which in our accounts, prepared for the information and guidance of the Department and Parliament, the whole of the Dockyards at Home and Abroad were treated as one establishment.

If from these figures we are led to conclude (and I come to this conclusion) that, as regards the indirect incidental expenses, there has been better management and greater economy, that we have had greater results with less expenditure of materials and labour than heretofore, may we not assume that this has been the case also with the direct expenditure upon ships built and repaired, and on manufactures, which cannot be so readily and clearly checked and compared?

As a Government, we are very particular in having perfect accounts as to our liabilities and assets, if they happen to be *money* liabilities and assets, but if they are *property*, such as land, buildings, machinery, stores, &c. (*i.e.* anything except money), in too many instances they are left to take care of themselves.

For instance, we know accurately the amount of our money liabilities as regards the capital of the National Debt, the interest of the Debt, and the expenses of carrying on Government; and we know the yearly money assets from all sources of revenue.

But though we know thus what we owe and possess in money, we know little or nothing of the value of the Governmental property, which, after all, is money's value.

Now, imagine a great railway or other public company being in this condition; spending money indiscriminately for capital or current purposes, and not distinguishing in their accounts between the two, I need scarcely say it would soon become bankrupt.

Can the results be better with the nation's property, if we neglect the safeguards adopted in all other cases? I think not. But then, in our case, the taxpayer is called upon to pay up, so that the Government cannot become bankrupt.

We have Commissioners of Inland Revenue, of the National Debt, &c., but why not also of the National Property? What is its value? Is it equal to the National Debt? If realised, would it

pay off the National Debt? If so, the nation cannot strictly be said to be in debt; or rather, if it is, it has Governmental property of equivalent value. I ask again, is the value of the Government property 100,000,000L., or ten or twenty times this sum? No one that I know of can give any approximate estimate of it.

All our Railway and other companies can answer the question so far as their property is concerned. The old East India Company could tell the value of its property; but, I am sorry to say that, since the Company has been abolished, the valuation has been discontinued, so that the present Indian Government is in the same category with our own in this respect.

I cannot think our Finance and other accounts of Government can possibly be satisfactory till this information is obtained and kept up year by year, so that when the House is asked to vote money, it and the Nation may be informed how much of it is to be spent in increasing the property of the country, or for capital, and how much for the current expenses of the year.

There is, in my opinion, as much necessity for a rigid check and control over the expenditure on, or depreciation of Governmental property of all kinds as over its actual money assets and liabilities, and I cannot think it creditable to a great commercial nation like England to be content with this state of things. I would, therefore, strongly urge this influential Society to give its aid in this direction.

In order that such valuation should be uniform, and that all Departments should be treated alike, it is, in my opinion, necessary that it should be made and checked from year to year by a central authority independent of the individual Departments. This central body should decide the principle of the valuation, and the methods to be adopted to keep it up year by year.

Though I think the information important for itself, and in order that we may know what we are expending on capital and what otherwise, I regard it as even more important, as giving the groundwork for compiling Expense and Statistical accounts for the various Departments, by which the results of Expenditure may be seen and checked, as I have endeavoured to show they are in some measure by the methods adopted at the Admiralty.

It will be seen from the Parliamentary Returns lately issued, i.e., No. 107, Retabulation of the Statement of the Surpluses and Deficits upon the Grants for 1871-72; and No. 96, Navy Shipbuilding and Dockyard Transactions for 1871-72; and No. 97, Navy Manufactures and Repairs in Dockyards, 1871-72; these two latter accounts being Division 1, Naval Yards, Part 1, Ships Returns, 96, and Part 2, Manufactures Returns, 97,—that the principles indicated in the foregoing remarks have, to a great extent, been carried out in Naval Accounts.

The Retabulation throws the whole of the Naval Expenditure into eight great Divisions, and connects the Parliamentary Estimates and Appropriation Accounts and Statements of Surpluses and Deficits with the Ships and the Manufacturing Accounts, these two latter (*i.e.*, the Ships and the Manufacturing Accounts) being Division 1 of the Retabulation, as explained by me previously.

Return 96, Division 1, Naval Yards, Part 1, Ships, begins on the Dr. side with the money received from Parliament and other sources for each Yard; gives the value of land, buildings, machinery, and stock of stores, at the commencement of the year; and shows on the Cr. side the expenditure upon each Ship built and repaired, with the indirect expenses (incidental and establishment) for each Yard, with other important information, and ends with the value of land, buildings, machinery, and stock of stores, at the end of the year, and such latter value will necessarily be the commencement on the Dr. side of the next year's Account. In this year, 1871-72, we have succeeded for the first time in getting the value of the stock of stores, &c., at the beginning and end of the year from the Foreign Yards and Depôts; see pp. 688 to 699.

Return No. 97, "Part 2, Manufactures," which previously was not connected with the Ships' Expense Account Part 1, is so now, and it commences its Dr. side by an Abstract of Accounts from Part 1 (see p. v.), and then thoroughly accounts for this in articles manufactured or converted in the 160 manufactories, factories, shops, &c., of the several Yards.

The manufacturing expenditure is small this year (1871-72), being only 784,236*l.*, but it has been previously as much as 1 $\frac{3}{4}$  millions.

A complete analysis of this book is made in order to obtain the rate-book prices to be charged at each Yard during the following year to the Ships for the various articles made, the latest returns forming the charges to the Ships built or repaired in the forthcoming year; and by means of this analysis the cost of similar articles made at the several Manufactories and Yards are compared, and are compared also with the market value, and each Yard and Manufactory is called to account for any excess cost, with, in my opinion, very great economical results.

Division 2, Victualling Accounts for 1871-72, are not yet out, but I expect them to be issued in a day or two. I cannot, therefore, at present refer to them, but I give an abstract of one account with analysis, for a previous year, to show one of the methods by which expenditure and the results thereof are checked.

## APPENDIX.

TABLE I.—*Statement and Analysis of the Quantity of Flour Manufactured in the Home Victualling Yards, Year 1868-69.**Dr.*

Particulars.	Deptford (Royal Victoria Yard).		Gosport (Royal Clarence Yard).		Plymouth (Royal William Yard).		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Items.	lbs.	£	lbs.	£	lbs.	£	lbs.	£
1. Wheat issued to be ground .....	747,420	6,018	633,223	4,177	299,612	2,305	1,680,255	12,500
2. Small stores and implements .....	—	12	—	9	—	3	—	24
4. Fuel .....	—	79	—	51	—	20	—	150
5. Labour .....	—	114	—	56	—	33	—	203
6. Special supervision .....	—	43	—	25	—	19	—	86
Total No. 1 (direct charges only) ....	747,420	6,266	633,223	4,318	299,612	2,380	1,680,255	12,963
7. General supervision ....	—	54	—	31	—	24	—	109
8. Repairs of machinery ....	—	29	—	1	—	2	—	32
Total No. 2 (includes indirect charges) }	747,420	6,349	633,223	4,350	299,612	2,406	1,680,255	13,104

*Cr.*

Particulars.	Deptford (Royal Victoria Yard).		Gosport (Royal Clarence Yard).		Plymouth (Royal William Yard).		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
<i>Flour Produced—</i>	lbs.	£	lbs.	£	lbs.	£	lbs.	£
Cost No. 1 (direct charges only) .....	545,720	5,865	499,660	4,087	234,026	2,248	1,279,406	12,200
Indirect charges (items 7 and 8) .....	—	83	—	32	—	26	—	151
Cost No. 2 (includes indirect charges) ....	545,720	5,948	499,660	4,119	234,026	2,274	1,279,406	12,341
<i>Offal—</i>								
Middlings—fine .....	18,032	79	15,800	59	10,452	37	44,284	175
coarse .....	38,976	122	—	—	—	—	38,976	122
Pollard .....	35,053	71	39,590	78	12,800	31	87,443	179
Bran .....	54,576	128	49,470	94	27,000	65	131,046	287
Proportion of mill sweepings .....	—	—	130	—	68	—	198	1
	146,637	400	104,990	231	50,320	133	301,947	764
<i>Loss—</i>								
In granary from shrinkage .....	—	—	—	—	1,949	—	1,949	—
In kiln drying .....	48,741	—	14,475	—	9,898	—	73,114	—
,, grinding and dressing	6,322	—	14,098	—	3,419	—	23,839	—
	55,063	—	28,573	—	15,266	—	98,902	—
Total .....	747,420	6,348	633,223	4,350	299,612	2,406	1,680,255	13,104

TABLE II.—The Average Production of Flour from 100 lbs. of Wheat is as below.

Yard.	Flour.	Offal.					Loss.			Total.	Weight per Bushel of Wheat Expended.
		Fine Middlings	Coarse Middlings	Pollard	Bran.	Mill Sweepings.	By Shrinkage.	In Kiln-drying.	In Grinding, &c.		
Deptford (Royal Victoria Yard)	73.01	2.41	5.22	4.69	7.30	—	—	6.52	0.85	100	61.12
Gosport (Royal Clarence Yard)	78.91	2.49	—	6.25	7.81	0.02	—	2.29	2.23	100	62.33
Plymouth (Royal William Yard)	78.11	3.49	—	4.27	9.01	0.02	0.65	3.30	1.14	100	62.42
Averages of the total quantity produced at all three Yards .....	76.14	2.63	2.32	5.20	7.80	0.01	0.12	4.35	1.42	100	61.80

TABLE III.—Average Detailed Expense of Manufacturing 100 lbs. of Flour.

Yard.	Quantity Produced.	Direct Charges.					Total Cost, No. 1, Direct Charges only.	
		Cost of Materials per 100 lbs. Item 1.	Cost of Small Stores, &c. per 100 lbs. Item 2.	Cost of Fuel per 100 lbs. Item 4.	Cost of Labour per 100 lbs. Item 5.	Cost of Special Supervision per 100 lbs. Item 6.	Cost per 100 lbs.	Amount.
Deptford (Royal Victoria Yard) .....	545,720	£ s. d. 1 - 7.07	d. .53	d. 3.47	d. 5.00	d. 1.88	£ s. d. 1 1 5.95	5,865
Gosport (Royal Clarence Yard) .....	499,660	- 15 9.53	.44	2.45	2.67	1.20	- 16 4.29	4,087
Plymouth (Royal William Yard) ....	234,026	- 18 6.82	.27	2.09	3.42	1.90	- 19 2.50	2,248
Averages of the total quantity produced at all three Yards .....	—	- 18 4.16	.45	2.82	3.80	1.62	- 19 0.85	—
Total .....	1,279,406	—	—	—	—	—	—	12,200

Yard.	Quantity Produced.	Indirect Charges.		Total Cost, No. 2, includes Indirect Charges.	
		Cost of General Supervision per 100 lbs. Item 7.	Cost of Repairs of Machinery per 100 lbs. Item 8.	Cost per 100 lbs.	Amount.
Deptford (Royal Victoria Yard) .....	545,720	s. d. - 2.36	s. d. - 1.27	£ s. d. 1 1 9.58	5,948
Gosport (Royal Clarence Yard) .....	499,660	- 1.48	- 0.04	- 16 5.81	4,118
Plymouth (Royal William Yard) ....	234,026	- 2.46	- 0.25	- 19 5.21	2,274
Averages of the total quantity produced at all three Yards .....	—	- 2.04	- 0.60	- 19 3.49	—
Total .....	1,279,406	—	—	—	12,340

DISCUSSION ON MR. F. P. FELLOWS'S PAPER.

Mr. FELLOWS said, in reply to a question which arose during the reading, he had the cost of each ship and of the repairs year by year, but there was no depreciatory value of the ships year by year. No doubt it was important to obtain this, as without it they could not get an absolutely correct view of the case. Our ships cost about 25,000,000*l.*, but nobody could say whether or not they were absolutely as valuable, taking all the ships that exist, now as they were, taking all those that existed, five or six years ago. That was a defect which ought to be remedied. A valuation was, however, kept of the stores, land, building, and machinery. At the beginning of the year 1871-72 the value of the land was estimated at 620,000*l.*: at the end of the year the value was unaltered, but the value of the buildings increased in that time from 10,567,000*l.* to 11,013,000*l.* On the 25th March, 1871, the value of the machinery was 843,000*l.*, and in March, 1872, 866,000*l.* The value of the stock of stores diminished from 2,951,000*l.* to 2,876,000*l.* These returns, however, only represented one division of shipbuilding, *i.e.*, the land, building, machinery, and stores used for shipbuilding, maintaining, and repairing purposes. They did not represent the victualling or transport, or other divisions. They, however, showed that in this one division the property was worth 40,000,000*l.* It would therefore be seen what an important part the property and stock was as compared with the current expenditure of about 3,000,000*l.* yearly.

SIR G. BALFOUR regarded the paper now read by Mr. Fellows as one of great importance in a national point of view. The material account which Mr. Fellows advocated was somewhat similar to that which the East India Company had formerly kept. That account was an annual stock-taking of all their property, and showed how the money yearly spent in buildings, in fortifications, in stores, and for other purposes, added to the value of their properties. This was the result of their mercantile experience, but with the abolition of their commercial rights, the stock accounts ceased to be kept with that accuracy and currency so essential for their utility; now these accounts have died out. He considered that our national accounts were still, in many respects, far from being efficiently kept. No doubt it was quite true, as Mr. Fellows had stated, that every fraction of the national money now expended was accounted for, and subjected to audit; the only drawback to that statement was the recent exposure in connection with the money spent on telegraphs without the previous sanction of the Treasury and of Parliament. He (Sir George Balfour) regretted this exception, not only by reason of the effect which it had on the reputation of the zealous and good officer at the head of the Telegraph Department, but

because it was bringing the system of Control, hitherto believed to be efficient, under suspicion. Still he must consider that the expenditure of the national money was well looked after in most respects ; the accounting was, however, seriously defective after the money was converted into stores and other stocks. Then it ceased to be watched in a suitable manner. For instance, there was no account existing or made public to show whether the War Department was or was not converting the public money into stores far beyond the real wants of the service, nor whether the actual expenditure of stores was in excess of, or below, the quantities laid in. The object of Mr. Fellows' paper was to advocate the preparation of an account which would show the condition of the stocks of stores, and whether the money yearly spent was sufficient or insufficient to meet the demands. It was shown by witnesses before the former Lord Northbrook's Committee on Public Moneys, that it was impossible for any person to know whether the departments of the Army and Navy were exhausting their stocks of stores, or were adding thereto. At the present time, we were raising money on terminable annuities with which to build the extensive fortifications deemed necessary for the national defences. That money was annually charged on the Consolidated Fund, and in the course of fifteen years the rate at which the money has been raised on these annuities would pay off the capital spent in erecting those fortifications. But there is no means of ascertaining the amount of money actually expended on these fortifications, and, particularly, when Parliament votes the annual payment of the annuity, it ceases to have any accounting knowledge of the capital spent. Again, the War Department is expending largely to lay in a stock of small arms and of large guns, not only for immediate use, but for reserves in case of any great emergency, and for this purpose the money is annually voted. But, strictly speaking, therefore, part of the money now applied to this purpose is borrowed from the present generation to meet the wants of the future. The public accounts, as at present kept, failed, however, to show that we were using up the current income of the kingdom for supplies in excess of our current wants, instead of placing a part of the burthen on those who come after us by raising the capital needed for the manufacture of these arms and guns in terminable annuities. A system of accounts such as that advocated by Mr. Fellows would at once remedy this serious defect. It was very different with regard to the Admiralty. That Board had taken the initiative by having the accounts of the material of the navy prepared under Mr. Fellows' charge. If similar accounts had existed in former years, their great utility would at once have been tested in a form that could not have been otherwise than useful to the country. For instance, it was well known that the navy had been completely reformed within the last few years. The nature, description, and armament of the present day being entirely different from the navy of a few years ago ; it would have been useful, in a financial point of view, to have known whether the present navy was more or less expensive than that of the former navy. Even now it would be advantageous, in a statistical point of view, to have such a comparison. This might be

very difficult to make, but perhaps Mr. Fellows might be successful in drawing the comparison on the following data:—

The assumed armament of the old navy required four fleets of vessels sufficient for about 18,000 guns of the old calibre, whereas the present navy, by means of large vessels and more powerful guns, only required, for the work to be done and the same efficiency maintained, that the navy should suffice for an armament of 2,200 powerful guns. With these data, and with the materials available, it would be not only interesting but useful if Mr. Fellows could furnish the country with a more easy comparison between the old and present navy. He therefore trusted that the Statistical Society would give their influential support to Mr. Fellows' advocacy of a material account for the whole property of the kingdom, and thus influence the Government in establishing a system of account which will enable the people to know the money value of the vast property of the nation, invested in the form of lands, buildings, stores, ships, and fortifications.

Mr. ROBERT RAWLINSON said he had formerly been connected with the dockyard at Liverpool, and with the corporation of that town, which owns nearly one-half the land upon which Liverpool stands; he had also been engineer to the Bridgwater Trust. At the Liverpool Dockyard the accounts were kept in such detail that materials of all sorts could be traced to their destinations, and the cost throughout be ascertained, and this was done at no extravagant expenditure for book-keeping or clerks. Of course stock was taken every year. Up to 1835 the property of the corporation had been much neglected, but after that date the accounts were set in order, and no such thing as a loss of property could then occur. The Bridgwater Trust, when he was appointed engineer, had thirteen steamers running from Runcorn to Liverpool, and several hundred flats working from the collieries to Runcorn and Liverpool, and about forty miles of underground tunnels connected with the collieries. He found that there had scarcely been anything worthy of the name of stock-taking, and that there was no proper machinery for an efficient utilisation of the yards. By the sale from the yards of the old iron, copper, and timber, he realised 1,700*l.*, besides building several new flats, and repairing a considerable number of old ones. There had been such a waste of material, nails especially, that after every heavy shower of rain the yard seemed to be literally strewn with them, but by vigilance and careful management a great saving was effected, and the accounts were put in proper order. Stock was taken of the timber lying in the yard; a special manager was appointed, who took care that no new timber should be used as long as there was old timber available. Subsequently stock was taken annually, and an estimate made of the purchases required. He found, too, that by dealing with four or five large firms the Trust could get tenders lower than in the usual way by advertising, the several articles having to be supplied as per specification or sample.

Mr. HAMMICK was of opinion that the use of the words

"Doomsday Book" in the title of the paper was somewhat misleading, as those words had a special reference to the division of the land in the country.

Sir G. BALFOUR said the fortifications were paid for by terminable annuities, which were paying themselves off.

Dr. GUY thought it would be extremely difficult to estimate the value of much of the national property, such as the fortifications at Gibraltar, and the various works at Malta and Bermuda. Auditors would find their task extremely easy so long as it was confined to an examination of the vouchers for money received and expended, but great difficulties would arise when they had to deal with the additions to, or the depreciation of the property.

Mr. J. B. BROWN said the difficulties which would have to be encountered would only be those which every merchant or manufacturer had to deal with annually. In all stock-taking there were depreciations in the value of particular goods to be taken into account, and the system could easily be applied to Government establishments. The expense of book-keeping was merely what every manufacturer or merchant must expect.

Mr. HENDRIKS thought there was no proper analogy between ordinary manufacturers and the Government, because in the case of the manufacturers the goods were made for sale, but Government kept or consumed what they manufactured, and a great deal was spent in keeping up the national dignity, and in experimental work, which no private manufacturer would undertake unless he were paid for it.

Mr. FELLOWS said he could not see the dissimilarity between the accounts with regard to Government ships and those of private manufacturers, except that the question of profit and loss must be ignored. The Government, however, carried on two trades, that of shipbuilders, and that of shipowners and maintainers, and to a certain extent in the accounts those two businesses must be divided. Still there was no reason why we should not ascertain the cost of the ships, in order to see whether it was excessive or not. No doubt there were difficulties, but the proper thing to do with difficulties was to grapple with them. Every private manufacturer had to make experiments: they formed part and parcel of the expenditure of his yards. It would be necessary to consider, with regard to establishment and other incidental expenses, how much was to be charged to the ships built, and how much to the Government in its national capacity. Of course perfect accounts would not only include stock of stores, but liabilities also. No doubt there was a difficulty in estimating the value of fortifications, but there was also a difficulty in estimating the value of docks, and slips for ships, and ship factories, and dockyards, and these latter difficulties had been overcome. If the depreciation of stores from one yard was found to be much greater than the depreciation from another yard, as

estimated by professional officers, the yard in which such depreciation occurred was asked to account for it, and this tended to economy. There was a certain formula for estimating the yearly depreciation with regard to the buildings and machinery of the Admiralty, and of course there must be a revaluation occasionally to check and correct the result of this estimate of depreciation. For many years, in spite of a law requiring stock to be taken every three years, no stock was taken at the Admiralty, and in fact it was found impossible to do it. A system of continuous survey or stock-taking had therefore been established, by which, as a rule, whenever the stock of any article was low at any time during the three years, stock was to be taken of it, it being compulsory that all the separate items of stock should be taken once at least in the three years. At the end of each year the actual remaining stock shown by the books was taken as the stock. With reference to the objection which had been taken to his use of the term "Doomsday Book," he pointed out that he had been the first to start the idea of a new Doomsday Book in a paper read at Edinburgh, at the meeting of the British Association there. At present little or nothing was really known of the final results of the expenditure of the national money, and the House of Commons really had little or no control over the expenditure in this sense; they could merely vote a sum of money, and see that it was applied in the payment of salaries, wages, purchase of stores, &c., but could not tell whether it was well or ill spent, or whether proper value had been obtained for the expenditure.

The PRESIDENT, in moving a vote of thanks to Mr. Fellows, said the subject was one of the very first importance. Accountancy could not deal adequately with the finance of a State. It is all very well to give minute details about the voted sums for particular objects, and the minute items of expenditure. But what was wanted was a good classified statement of the property fixed, durable, and perishable, with its value at the beginning, and its value at the end of each calendar year; the additions made to it from revenue and the deductions for expenses under different heads. The Navy is an admirable example of the necessity of such a statistical exposition. And the Society will rejoice to see the Admiralty taking the lead in this great system of administrative reform which has already been begun so well under Mr. Goschen.

Mr. FELLOWS said railway companies did keep the capital account separate, which was the important thing, but whether they did it accurately or not was another matter.

The proceedings then terminated.

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*The Statistics of Legislation.* By FREDERICK H. JANSON, ESQ.,  
F.L.S., Vice-President of the Incorporated Law Society.

[Read before the Statistical Society, May, 1873.]

THE congeries of printed matter, popularly known as the "Statutes "at Large," has long been the marvel even of those who are most familiarised with the bulk and verbosity of the Acts of our Legislature. Commencing with the Statute of Merton, in the reign of Henry III, Acts of Parliament have gone on accumulating uninterruptedly through succeeding centuries, and threaten in the course of years to make up a sufficient number of volumes to fill the shelves of an ordinary library.

The number of public Acts passed from the Statute of Merton to the end of last Session, exclusive of the ante-Union Acts of Scotland and Ireland, is 18,110, occupying 36,497 quarto, and 2,109 octavo pages. (The public statutes ceased to be issued in the quarto form after the year 1870.) A quarto page contains about  $2\frac{1}{2}$  of the matter comprised in one of the octavo edition.

In a table below, I have given the numbers of Acts of all classes passed in the reign of each sovereign, and shown the average number passed in each year and each reign, distinguishing the public from the local and personal and private Acts.

The number of Local, Personal, and Private Acts (including public, local, and personal Acts, local and personal Acts to be judicially noticed, local and personal Acts not printed, and all others not properly classed under the heading of, or printed with, the public Acts) from the Statute of Merton to the end of the Session of 1872, is 23,222. The number of quarto pages they occupy is approximately 426,800. The entire quantity of printed statutes of all classes would fill about 464 quarto volumes of 1,000 pages each.

It must not, however, be supposed that these Acts of the Legislature, or even any large proportion of them, are in force at the present day. By far the greater number (I estimate it at four-fifths) have been wholly or partially repealed, others were passed for temporary purposes only, and some have fallen into desuetude.

In the first report of the "Digest of Law Commission," the Commissioners observe, "The statute law is of great bulk. In the "quarto edition in ordinary use, known as 'Ruffhead's,' with its "continuations, there are forty-five volumes, although (particularly

" in the earlier period) a large quantity of matter is wholly omitted, " or given in an abbreviated form, as having ceased to be in force. " The contents of these volumes form one mass without any " systematic arrangement, the Acts being placed in merely chrono- " logical order, according to the date of enactment; in many cases " the same Act containing provisions on heterogeneous subjects. A " very large portion of what now stands printed at length has " been repealed, or has expired, or otherwise ceased to be in force. " There is no thorough severance of effective from non-effective " enactments, nor does there exist in a complete form any authoritative " index or other guide by the aid of which they may be distinguished. " Much, too, contributes to swell the statute book which is of a " special or local character, and cannot be regarded as belonging " to the general law of England."

One want here referred to has been largely met by that admirable work, "The Chronological Table of and Index to the Statutes," published by authority in the year 1870, and undertaken in pursuance of a suggestion made by Lord Cairns to Lord Chelmsford, during the time the latter held the Great Seal. A glance at its columns will show how largely repeal, amendment, and expiration have been affecting the Statutes which still find a place in our collections.

We find there that, of the Statutes passed in the reigns down to and including that of George IV, fully nine-tenths have either expired, become spent, or been wholly or partially repealed; and that of the 217 public Acts passed during the first two years of the reign of Her present Majesty (1838 and 1839), 47 have been wholly, 29 partially, repealed; 26 have expired; and 29 become spent.

Even of the 134 public Acts passed so lately as during the eighteenth and nineteenth years of Queen Victoria (1856 and 1857), only 68 remain entirely in force; and of these several relate to the colonies, and others belong to the class of Local and Personal Acts.

There were 98 public general Acts passed in the last Session of Parliament; while the number of existing Acts of the same class repealed or amended by them amounted to 1,638; but of these 1,443 were wholly repealed by the Statute Law Revision Acts.

A commission was appointed a few years since to compile a revised edition of the Statutes, which should contain only those Acts, or portions of Acts, now in force. The Commissioners have made progress with their work, but have at present only published the result of their labours down to the end of the year 1800.\* This, however, sufficiently shows the vast amount of effete matter contained at all events in the earlier volumes. The *revised* edition

\* The revision has, I am informed, been carried down to 1810, but the revised statutes have been published down to the end of the year 1800 only.

of the Statutes, now published, occupies only 2,146 large octavo pages. The "Statutes at Large" of the same period, *i.e.*, down to the end of the year 1800, fill 8,832 small folio pages.

The difficulties presented through this condition of the Statute Book to the legal practitioner, who is responsible for the advice he gives to those who consult him, may be readily conceived; and the position of the general public seems by no means a comfortable one; since every subject of the realm is presumed to know the law, and is amenable to punishment if he breaks it; in other words is required, under legal penalties, to ascertain for himself, which of the numerous enactments on the roll of Parliament are still in force, and to regulate his conduct by them.

The labour of ascertaining the actual state of the statute law on any given question is much increased by the want of care in the language employed in drafting clauses, and by the practice which has grown up of late years of framing enactments by reference to clauses contained in previously existing Acts.

As Statutes are the expression of the will of the highest power in the State, and bind the public with omnipotent force, one would have expected to find them models of perspicuity and precision; that the reverse is too often the case, the sequel will abundantly show.

As an illustration of the perplexities that beset those who desire no more than to perform the duties and exercise the powers committed to them by Parliament, I may mention what occurred in the parish in which I reside, in connection with measures for the prevention of epidemic disease, and the preservation of the public health.

In the summer of 1871, we found ourselves called upon at short notice to take measures in anticipation of a visitation of cholera to this country. I was asked to ascertain what powers the parishioners possessed, and in what way they could be exercised, and I sent for a Queen's Printer's copy of the Sanitary Act of 1866, which was thought at that time to have superseded the preceding legislation on that subject, and to contain what might be regarded as the sanitary code.

The first point to be ascertained was with whom the power of acting lay, or, in the words of the Act, who was the "Sewer Authority."

For this information I found myself referred to a previous Act, "the Sewage Utilisation Act," and after some study succeeded in satisfying myself that the "sewer authority" was the Vestry of the parish. A Vestry was accordingly summoned without delay.

The Act conferred considerable powers on the "sewer authority," and authorised it to appoint a committee consisting of members of

its own body to whom it might delegate all its powers. This course was, for obvious reasons of convenience, at once taken. The committee so appointed gave orders for disinfectants and medicines, appointed places where they might be applied for, arranged with certain inhabitants to visit the various portions of the parish, and report upon matters that called for immediate attention, and they appointed two efficient members of their body as sanitary inspectors to give notice to those whose acts or defaults were endangering the public health.

Some very useful results followed from our first proceedings; but our power to compel obedience to sanitary laws was soon challenged by the indolent and refractory, and our action became paralysed. The Board of Guardians, who had been constituted the sanitary authority under "The Nuisance Removal Acts," and had no idea of being displaced, demurred to our interference, and all but encouraged opposition to it. They contended that the sewer authority which was first mentioned in the "Sewage Utilisation Act of 1865," could only be brought into existence where it was determined to form a drainage district, which was the chief object of that Act; and that sufficient machinery for carrying out the objects of the Vestry existed under "The Nuisance Removal Acts;" and they plainly intimated that they should disallow any rate to meet the expenses incurred by the vestry, or the committee to whom it had delegated its powers.

For our guidance in these difficulties, a case was laid before a gentleman of the common law bar, of whose opinion, which is very significant as illustrating the defects of our legislation, I will give the substance shortly.

Inferentially, he thought it clear that the Vestry was the "sewer authority," several clauses showing that the maintenance of the public health was intended to be one of the duties of that body, and not the disposal of sewage only. That although there were duties imposed on the sewer authority, which required the aid of a clerk, and of a surveyor or similar functionary, there was no clause directly authorising the appointment of either, nor any provision for the remuneration of any officer employed. As no officer could be appointed with a salary, he recommended that the Vestry should employ some person from time to time to do specific things, and remunerate him for the work done in each case. He was also of opinion that there was no power to prevent the occupation of any house which, from dampness or defective construction, was unfit for habitation, or to interfere with the use of polluted wells, objects which were obviously of vital importance to the maintenance of the public health.

Ultimately it was admitted that the Vestry was the "sewer

"authority;" but the immediate danger which had aroused the inhabitants into action having passed away, and as they were informed by the authorities of the Board of Health that a Bill would be brought in next Session, which, if passed, would remove the existing difficulties, the matter was allowed to drop, except that communications were made to the Local Government Board, pointing out the deficiencies of the existing law, which had been brought to the notice of the inhabitants, and suggesting improvements.

Early in the last Session a bill was brought in by the Government, which ultimately passed into law under the title of "The Public Health Act."

Here, at last, we thought we should find a Code for our future guidance, free from all reference to the preceding mass of statutory matter; but in this we were doomed to disappointment. The Sanitary Authority of the future was defined with sufficient clearness; but the Legislature thought fit to declare its powers by reference to whole classes of Acts, set out in detail in the sixtieth and concluding section, which contains what are called "the definitions."

The powers conferred upon the new Sanitary Authority are summed up in the eighth clause as follows:—

"Subject to the provisions of this Act, and from and after the first meeting of a rural sanitary authority in pursuance of this Act, there shall be transferred and attach to a rural sanitary authority, to the exclusion of any other authority which may have previously exercised or been subject to the same, all powers, rights, duties, capacities, liabilities, and obligations within such district exercisable or attaching by and to the sewer authority under the *Sewage Utilisation Acts*, and by and to the nuisance authority under the *Nuisances Removal Acts*, and by and to the local authority under the *Common Lodging Houses Acts*, the *Diseases Prevention Act*, and the *Bakehouse Regulation Act*, or by and to any of the said authorities under any of such Acts, or any Acts amending such Acts." There are thus five distinct classes of Acts referred to.

On turning to the definitions we find it declared as follows:—

The "Sewage Utilisation Acts," the first of the classes, means 28 and 29 Vict., cap. 75 (The Sewage Utilisation Act, 1865); 29 and 30 Vict., cap. 90 (The Sanitary Act, 1866); 30 and 31 Vict., cap. 113 (The Sewage Utilisation Act, 1867); 31 and 32 Vict., cap. 115 (The Sanitary Act, 1868); 32 and 33 Vict., cap. 100 (The Sanitary Loans Act, 1869); 33 and 34 Vict., cap. 53 (The Sanitary Act, 1870).

"Nuisances Removal Acts" means 18 and 19 Vict., cap. 121 (The Nuisances Removal Act for England, 1855); 23 and 24 Vict., cap. 77 (An Act to Amend the Act for the Removal of Nuisances

and the Prevention of Diseases); 26 and 27 Vict., cap. 117 (The Nuisances Removal Act for England (Amendment) Act, 1863); 29 and 30 Vict., cap. 41 (The Nuisances Removal Act (No. 1), 1866); 29 and 30 Vict., cap. 90 (The Sanitary Act, 1866).

The Common Lodging Houses Acts, the Diseases Prevention Act, and the Bakehouse Regulation Act, are defined by reference to other Acts, the dates of which I need not give in detail, but which are *five* in number.

There are ten other Acts mentioned in the definition clause as being referred to in other parts of the Sanitary Act under consideration.

Similar confusion and complexity will be found to exist in regard to that class of Acts known as "Local and Personal," which, as already mentioned, are kept distinct from Public Acts, and do not find a place in the Statutes at Large.

As an instance of the mode in which Statutes of this class are undergoing alteration by subsequent Acts of the Legislature, I may refer to a parliamentary notice, published in the London papers in November last, by the "Edinburgh, Loanhead, and Roslin Railway "Company"—one I believe quite unknown to fame. The notice is of an intended application to Parliament for an Act to enable the Company to extend its lines, to enter into working arrangements with the North British Railway Company, to apply their present capital to proposed new works, and for other purposes.

The notice, after stating more at large the objects of the Bill, and the powers proposed to be taken, proceeds by its thirteenth section to announce that it is proposed to repeal, alter, or amend certain of the provisions of "The North British, Edinburgh, Perth, " and Dundee, and West of Fife Railways Amalgamation Act, " 1862, and of the several Acts of Parliament following, or some of " them, relating to the North British Railway Company, and the " undertakings belonging to or connected therewith;" then giving the sessional titles of no less than *one hundred and twelve* separate statutes!

Attention has recently been drawn by our judges and the press to the anomalies of our legislation.

In the report of the case of "Solomon *v.* Isaacs," in the "Times" of the 28th November, the following observations occur:—

"This case, which lasted all day, illustrated very strongly our "judicial system and our system of procedure.

"It also illustrated the difficulties attending the construction of "statutory law, especially when, as in the instance of bankruptcy "law, it is constantly being changed. During the last twenty-two "years there have been three Bankruptcy Acts, that of 1842, that of

" 1861, and that of 1869. The present case arose under that of 1861, " from which it will be seen, to begin with, that it has been pending " about three years. Each of these Acts, as counsel observed, con- " tained provisions on the same subject in different language, so " that the decisions of the courts on one set of enactments were no " authorities on the other. And as every eight or ten years the " terms of the law were thus altered, the difficulties of construction " were not only perpetuated but increased. Hence the number and " variety of judicial decisions on all the questions that can arise " under a bankruptcy law, especially that most vital question of all, " how far bankruptcy clears a man for the future."

A leading journal of the 30th January last observes:—

" The spectacle presented by the members of the highest courts " of common law vying with each other in sarcastic comments upon " the construction of a new statute, is a spectacle which speaks for " itself, and it is one which has been witnessed half-a-dozen times " at least in the course of the current term. The last and most " flagrant instance occurred a few days ago in the Court of Queen's " Bench, when the Licensing Act of last session came under review. " On this occasion the judges, after an ineffectual attempt to dis- " cover what the law was, opened a fire of criticism on the 'bungling " legislation' they were called upon to interpret and administer. " Mr. Justice Mellor remarked, that 'it was impossible for human " skill to find words more calculated to puzzle everybody. They " could not have been more ingeniously selected if such were the " purpose in view.'

" The Lord Chief Justice observed, that 'he had never in the " whole course of his judicial experience seen a more confused and " puzzling Act than this. The section in question was utterly " bewildering. It was, in fact, the most complicated complication " he had ever met with. The Legislature must have had some " intention on the point, but what it was he was unable to " discover.' Mr. Justice Blackburn, 'While agreeing in the " general spirit of the Lord Chief Justice's remarks, desired to " take exception to his description of the Act as the most confused " specimen of modern legislation. That place was, he thought, " properly to be assigned to the Public Health Acts.'

" The significance of these criticisms is not diminished when we " reflect that the particular method of legislation to which the con- " demned Act owes its obscurity is one which seems to be viewed " with particular favour by the Legislature. It was, in fact, the " familiar case of Statute A enacting certain provisions, followed by " Statute B, 'incorporating' the provisions of Statute A, and that " again followed by Statute C, repealing said provisions by mere " reference to the sections of Statute A which contain them, and

" without reference to the fact that they exist also in an 'incorporated' form in Statute B."

Nothing can be conceived more calculated to foment litigation than placing such matter on the Statute Roll. The lawyers are not unfrequently twitted with their proneness to incite their clients to litigious action; but while Acts of Parliament are, as at present, passed in large numbers in terms which not even the great legal experts can interpret, there will be no want of pabulum for legal disputation, or employment for legal practitioners.

The writer just quoted observes further on:—

" It is a matter rather of curious than of useful speculation to inquire why the meaning and purport of Acts of Parliament are darkened and confused. Mr. Justice Blackburn, in the course of his judgment, threw out a suggestion on the subject. 'The Government,' he thought, 'did not wish to take the plain and simple course, but rather preferred to take the other and less direct course, because they thought there might be more difficulty in Parliament in carrying an Act which would work drawn in a plain and simple manner; and they therefore preferred an Act drawn in a form in which it would pass, although it would not work, throwing upon judges the onus of interpreting it with the help of Providence, so that it might work.' "

These last are the words, not of the writer, but of the judge, and I quote them as coming with authority, though without venturing to express any concurrence in the disquieting suggestion they convey.

Another writer, commenting on this judgment, remarks as follows:—

" This learned judge went to the root of the matter by pointing out that intelligible legislation is hardly possible when parts of Acts are repealed and fragments remain still in force. He stated that he was informed that it is found impracticable to sweep away all Acts relating to a subject, and to pass a fresh Act on that subject in one session of Parliament. Hence the draughtsman has to draw 'what will pass,' and Parliament must share with the draughtsman the blame of the increasing absurdity of our statute law. The true remedy is perhaps to be found in the delegation by Parliament of a portion of its powers to some such body as a skilled legislative committee, which would bring all legislation into conformity with certain rules which would be dictated by common sense. Till something of the sort is done the draughtsman must draw, not as good a bill as he can, but 'a bill that will pass,' and even this gets so mangled in its passage through both Houses, that he hardly recognises his own workmanship when it has become the law of the land."

In a recent debate in the House of Commons, Mr. Shaw Lefevre, the member for Reading, spoke in terms equally strong of the defects and inconsistencies of the Married Women's Property Act of 1870; and in the case of a conviction under the recent Act for the Protection of Birds, the magistrates' clerk observed that what might have been a very beneficial Act of Parliament was entirely useless, inasmuch as it did not provide for the issue of warrants to enforce payment of the penalties it imposes.

A writer in a periodical of the present year, after expressing a hope that "a member of Administration would not introduce another 'Amendment Act' of the received pattern," goes on to say, "The patchwork and make-shift legislation which bears this name is a disgrace to the English statute book, and the source of more litigation than all the judge-made law in the Reports. Until we learn to make important Acts of Parliament *self-interpreting* and *self-contained*, the maxim 'Ignoratio juris neminem excusat,' is a mockery of justice, being utterly at variance, as Sir Samuel Romilly once observed, with that other most rational maxim, 'Lex neminem cogit ad impossibilia.'"

It will probably be felt that this is scarcely the place for entering upon the remedies for the mischiefs complained of. The functions of this Society, I apprehend to be, not to take in hand the improvement of legislation, but to collect facts for the use of those to whom the work of reform belongs. The bulk of our Statute Book is in part the necessary consequence of the increasing activity of the Legislature; and the imperfection of our Acts of Parliament is often due to the haste with which Bills are hurried through their later stages, especially towards the end of the session; but there can be no doubt that much might be done to improve the system on which they are framed.

Thus it will, I think, be admitted that Acts of Parliament, especially administrative Acts, should, as far as possible, be complete in themselves, avoiding reference to former Acts except for the incorporation of powers and provisions which are common to many; and that general Acts, on the model of the Lands and Railways Clauses Acts, should be passed, embodying such powers to save frequent and unnecessary repetition.

It has been suggested, as already mentioned, that advantage would result from the appointment of some high functionary or a committee, whose business it should be to see that Acts of Parliament are at least intelligible and consistent in themselves, or, to use the words above quoted, are "self-interpreting and self-contained," and possess all needful, while they do not contain superfluous, provisions: but this would involve the necessity of delegating

legislation, to some extent at least, to an individual, or to a body, distinct from the Legislature itself—a course from which both Houses of Parliament would probably be averse, and which might sometimes delay legislation for the period of an entire recess. The public, however, would, I think, prefer any alternative to that now presented to it, of Statutes passed, for the accomplishment of great public objects, which bewilder the reader by the multiplicity of the references they contain, are valueless from the omission of provisions indispensable to their practical working, or incomprehensible to the very highest intelligences from the obscurity of their language.

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## APPENDIX.

TABLE I.—*Showing the Number of Acts Passed in each Reign from the Statute of Merton (20 Henry III), to the end of the Session of 1872.*

Name of Sovereign.	Number of Years Reign of each Sovereign.	Number of Public Acts.	Number of Local, Personal, and Private Acts, including Public, Local, and Personal Acts, Local and Personal Acts to be Judicially Noticed; Local and Personal Acts not Printed, and all others not included in Preceding Column.	Total Number of Acts of every Description.	Average Number of Public Acts only, Passed in each Reign per Annum.	Average Number of Local, Personal, and Private Acts Passed in each Reign per Annum.	Average Number of Statutes of every Description Passed in each Reign per Annum.
Henry III.....	56	45	—	45	0·803	—	0·803
Edward I .....	35	221	2	223	6·314	0·057	6·371
" II .....	20	99	4	103	4·95	0·2	5·15
" III .....	50	268	3	271	5·36	0·06	5·42
Richard II .....	22	127	2	129	5·772	0·090	5·863
Henry IV .....	14	96	4	100	6·857	0·285	7·142
" V .....	9	41	2	43	4·555	0·222	4·777
" VI .....	39	146	8	154	3·743	0·205	3·948
Edward IV .....	22	24	—	24	1·090	—	1·09
" V.....	—	—	—	—	—	—	—
Richard III .....	2	14	18	32	7·0	9·0	16·0
Henry VII .....	24	114	194	308	4·75	8·083	12·833
" VIII .....	38	412	301	713	10·842	7·921	18·763
Edward VI .....	6	118	49	167	19·666	8·166	27·833
Mary and Philip } and Mary .....	5	82	29	111	16·4	5·8	22·2
Elizabeth .....	45	272	166	438	6·044	3·688	9·733
James I.....	22	134	168	302	6·090	7·636	13·727
Charles I .....	24	51	34	85	2·125	1·416	3·541
Charles II and Com- monwealth .....	36	238	296	534	6·611	8·222	14·833
James II .....	4	22	8	30	5·5	2·0	7·5
William and Mary } and William III .....	13	346	466	812	26·615	35·846	62·461
Anne .....	12	338	605	943	28·166	50·416	78·583
George I .....	13	377	381	758	29·0	29·307	58·307
" II .....	33	1,547	1,234	2,781	46·878	37·40	84·272
" III .....	60	7,243	8,382	15,625	120·716	139·7	260·416
" IV .....	10	1,066	2,120	3,186	106·6	212·0	318·6
William IV .....	7	678	1,123	1,801	96·857	160·428	257·285
Victoria.....	35	3,991	7,624	11,615	114·028	217·828	331·857
Total .....	656	18,110	23,223	41,333	—	—	—

The number of *Public Acts* passed during the last five years is 574, and the number of *Personal, Local, and Private Acts* passed during the same period is 970. The numbers are made up as follows:—

TABLE II.

Session and Year.	Public Acts.	Personal, Private, and Local Acts.
31 and 32 Vict., 1868 .....	130	193
32 „ 33 „ '69 .....	117	171
33 „ 34 „ '70 .....	112	181
34 „ 35 „ '71 .....	117	217
35 „ 36 „ '72 .....	98	208
	574	970

The number of Public Acts affected (*i.e.* repealed, partly repealed or amended), by those passed during the last *three years*, is 3,532, and is made up as follows:—

*Session of 33 and 34 Vict., 1870—*

Affected by various statutes.....	253
Repealed by Statute Law Revision Act, 1870 .....	251
	— 504

*Session of 34 and 35 Vict., 1871—*

Affected by various statutes.....	325
Repealed by Statute Law Revision Act, 1871 .....	1,065
	— 1,390

*Session of 35 and 36 Vict., 1872—*

Affected by various statutes.....	195
Repealed by Statute Law (Ireland) Revision Act, } 1872 ..... }	685
Repealed by Statute Law Revision Acts, 1872 .....	758
	— 1,638

Total repealed and affected by Acts passed during }  
the last three years was ..... } 3,532

DISCUSSION *on MR. JANSON'S PAPER.*

PROFESSOR LEVI asked whether any distinction had been made in the statistics of Acts of Parliament, between Acts promoted by private members and Acts originally brought forward by the Government, and suggested that to avoid the complication which was manifest in so many Acts, private members should in the first instance bring forward propositions embracing the leading principles of the reforms which they advocate, leaving the framing of measures founded on those principles to a special legislative department of the Government. Parliament attempted too much. A large portion of the private Acts might be delegated to local parliaments, so that the time of the two Houses might be given more completely to public Acts.

SIR CHARLES DILKE referred to the Act for Valuation for Rating Purposes, as an instance of the confusion which was sometimes manifested in the wording of even Government bills. Among other matters it dealt with the rating of Government property, with regard to which point there was a unanimous agreement throughout the country, but so confused was the wording, that though a court of law would probably decide that the meaning was that Government property should be subject to poor rates, and poor rates only, Mr. Stansfeld had stated in the House of Commons that it was his intention to subject Government property to all rates. The Parliamentary and Municipal Electors Register Bill was another illustration of the same confusion. Throughout the whole Act no date was given, but only this phrase, "the day which under this Act shall be substituted for such and such a date." The progress of the Birds Protection Bill showed how these blunders arose. It was originally introduced by Mr. Johnstone as a bill for the protection of wild fowl only, but an instruction was moved declaring in the abstract that it was desirable to include all birds. It was then referred to a committee. Its author abandoned it and it was taken up by Mr. Herbert. The committee numbered in its ranks many opponents of the principle of protection of small birds, but there being a strong feeling in the country in favour of such a bill, and nobody caring to incur the unpopularity of opposing it, indirect course was taken, and the bill was so mangled that it was impossible it could work. It was quite a mistake to suppose that it was the object of Parliament to protect these birds: probably the object was to make the bill such that it could not work under any possible combination of circumstances. The schedule of the birds to be protected only contained the names of those of which most people had never heard, while well-known birds were exempted from the operation of the Act. Towards the last days of the Session there was always a great mangling of bills. One member, perhaps, who

was a strong opponent of a particular bill, would announce his intention of fighting it at every possible opportunity, and in order to overcome his opposition the Government draughtsmen would be called upon at a moment's notice to admit certain words into the bill, of which the full effect could not be immediately perceived, and so the whole bill might be thrown into confusion. To remedy these evils, Parliament might, as suggested in the paper, pass resolutions containing principles, and some responsible body, somewhat after the French Council of State system, might be required to see to the drafting of the bills, Parliament, of course, exercising supervision over them.

Mr. DUDLEY BAXTER said there were three classes of bills, private bills, public bills introduced by private members, and Government bills. A private bill was the most fortunate in its mode of treatment, for it was in the hands of a parliamentary agent, whose reputation was at stake to secure its passing in such a form as to do what his clients wished to be done. It contained references, but they were to certain well-known Consolidation Acts, and therefore the objections to references did not apply. If alterations were made in committee, time was always given to the parliamentary agent to put the pieces together; and the consequence was that the clearness of the majority of private bills, and the freedom from puzzling references could scarcely be exceeded by any system which could be introduced. Bills introduced by private members were also generally intelligible in their wording when first introduced, but in their passage through Parliament they were considerably knocked about. Public bills introduced by Government were drawn up by Government draughtsmen, who were skilful and experienced, but they had for some reason or other, adopted the objectional system of reference. It was much more easy to refer to former Acts than to insert concisely the parts that were wanted. When a bill got into committee, the processes it went through were most embarrassing to the Government draughtsman, from the want of time and the impossibility of reconciling conflicting clauses introduced by private members. The consequence was that the bill often became a chaos of contradictions, with no one responsible for seeing that they formed one intelligible whole. The private bill had another advantage over the public bill. At a certain stage in the House of Commons it was submitted to the Chairman of Committees, and when it reached the Upper House to Lord Redesdale, who was very careful to expunge everything which was not strictly according to rule, or which was unintelligible, or which introduced some dangerous precedent. It would be desirable to have some such ordeal for public bills as well as private bills. He did not think the remedy suggested by Sir Charles Dilke would be successful, since Parliament would never be bound by the proceedings of an external council. Something similar had been tried when the Board of Trade or the Referees were set up as a critical tribunal, but Parliament had always given them up in the end, and gone back to the simple method of committees. He would suggest the appointment of some authority equivalent to the Chairman of

Committees on private bills. The appointment of skilled barristers had been advocated, who should take the bills after committee, put them into shape, and return them again to the House; but the private members or the Government would inevitably be impatient and jealous of such control by a subordinate over their proceedings. This objection, however, would be overcome if the officer appointed to examine the bills were, like the Chairman of Committees, an important and leading member of the House.

Mr. HAMMICK said one peculiarity about private bills was that there was always an attempt to introduce into them special clauses, giving special privileges to the company on whose behalf it was promoted. The Marriage Laws afforded another instance of the inconvenience arising from the present system of legislation. Those laws were contained in about thirty Statutes, which had to be carried out by about 15,000 clergymen of the Church of England, including many inexperienced curates, and 2,000 or 3,000 civil officers who had to give the necessary preliminary authority for marriages. Of the leading Acts on the subject some sections were actually repealed, others virtually repealed, or expired, or spent, or obsolete, and the result was that many irregularities arose in the solemnisation of marriages, which, while not affecting the validity of the marriages, disturbed the minds of the parties concerned, when made known to them, and gave many unscrupulous rascals a pretext for deserting their lawful wives. While the practice was continued of repealing portions of sections of Statutes without any attempt at consolidation of the law these evils must be perpetuated. The Church Building Acts, again, formed a tangled web of legislation which no one could unravel. The present system of references and of repealing portions of sections, could not but lead to confusion. He trusted that when the labours of the Statute Law Commission were ended, the work of consolidation of the law would be taken in hand.

Mr. C. WALFORD suggested that the Statute Revision Commissioners might from time to time point out to the members of the Government such subjects as really required to be dealt with. If only one or two subjects were taken up in one Session, and properly attended to, the Statute Book would soon present a different appearance. Some thirty different Acts were in existence relating to the duties of Coroners, but any skilled draughtsman could in a very few days produce one simple measure which would render all the other Acts unnecessary. The Chronological Table published in the year 1870 might have been made very useful, but it had no dates (years of our Lord) in it, and simply gave the years of the reigns of the sovereigns. The titles of the Acts, too, were very deceiving in some cases, and totally wrong occasionally. It appeared to him that for the last five hundred or six hundred years, one generation had occupied the greater portion of its time in undoing the legislation of the generations which preceded it. The first five volumes, however, of the Statutes were as clear and concise as could possibly be. From the reign of George the Third a different state of things had existed, and it was these modern Acts which needed to be

revised. A very small amount of practical skill could accomplish all that was required. The House of Lords' Index of the Statutes would be found very valuable for exact reference to the Statutes.

Mr. LUMLEY said he was perfectly satisfied that laws could never be made so intelligible to the mass of the people that it would be unnecessary to employ persons who made law their special study. With regard to the question of references, he was of opinion that no great measure could be passed in Parliament without the use of references. Previous legislation must always be referred to, and unless references were employed that which had been previously decided might again become a subject of discussion, and perhaps rejected. Mr. Janson had complained of the Public Health Act of last year, but what would have been the size and nature of the bill if it had contained all previous enactments on the subject. It was well known that the object was to confer upon new bodies the powers which had previously existed, and how could it be done better than by referring to the Acts in which the powers were contained? The Church Buildings Act, introduced four or five years ago by the present Lord Selborne, attempted to consolidate previous Acts in a most convenient form, but there was one particular clause in it which was obnoxious to the Nonconformists, and the consequence was, as the promoters of the bill could not abandon that clause, the whole thing fell through. The Merchants Shipping Bill, of eight hundred clauses, was simply a code of laws, and for that reason encountered violent opposition. It was said that it was objectionable to repeal parts of clauses by reference, but it was the most easy method of doing what was required. He did not think that the Customs Acts, the Appropriation Act, and the Mutiny Act ought to be regarded strictly as legislation. They were really only ordinary matters of regulation and of government.

Mr. FREDERICK PURDY drew attention to the fact that while Edward I reigned just the same number of years as Queen Victoria has now been on the throne, the average number of Acts annually passed in the former reign was only  $6\frac{1}{2}$ , while in the present reign the average has been 332. The Acts, too, afforded quite as great a contrast in their size and character. The Rating Clause, the 43rd of Elizabeth, consisted of a few lines only, while Mr. Stansfeld's rating bill of the present Session contained sixty or seventy clauses. Hence the mere counting of the Statutes conveyed a very inadequate idea of the increase of modern legislation. Bentham had said that the words of the legislator should be weighed like diamonds; but they appeared now-a-days to be weighed more like dross. He had heard an anecdote of the Warden of a College at Oxford, who married, and, as a fellow was allowed to have a wife for twelve months only, at the end of which period he was expected to resign his fellowship; but it was afterwards discovered that in an Act for the improvement of the parish, there was a clause stating that the Wardenship of the College was not to be vacated by marriage. A local Act, a copy of which is to be seen at the Office of the Local Government Board, is entitled "An Act for the better Regulating,

Paving, Improving, and Managing the Town of Brighthelmston in the county of Sussex, and the Poor thereof."

Mr. HAMILTON said the great increase in the number and complexity of Acts of Parliament appeared to have begun in the reign of George III, when the private bills more especially were multiplied. A remedy for the evils that existed might, he thought, be found if Parliament would divest itself of some of the functions which it at present discharged. Private bills might be dealt with by some tribunal which would visit the different localities and examine the witnesses on the spot, reporting to the House of Commons, as is now done with disputed elections. Economy, as well as efficiency, would thus be secured, and Parliament would be able to devote more attention to public bills.

Mr. DUDLEY BAXTER said there was one great objection to the recommendation that private bills should be remitted to the provinces. It would be found far more expensive to take the lawyers down to the witnesses than to bring the witnesses up to the lawyers.

Mr. FELLOWS said some years ago an Act was passed making the metric system of weights and measures legal, but when a shopkeeper proceeded to use that system and had weights and measures for that purpose, he was taken before the magistrate and it was found that he was liable to a fine for using weights and measures that had not been legally verified, no provision having been made in the bill for the establishment of metric standards.

Dr. NEILSON HANCOCK thought that in the present crowded state of parliamentary business, legislation by reference was indispensable. If a bill had only a reasonable number of clauses there was a chance of its passing, but if it embodied too much of previous legislation it laid itself open to strong opposition. A great deal of the difficulty arising from the use of references might be got over by the publication of manuals by the departments having to administer the particular Acts. Such manuals would cost no more in printing than a consolidated Act, and they would be the first steps towards a Code.

Mr. JANSON, in reply, said the Government departments were in reality the chief offenders. The passage of private bills did not interfere with the course of public legislation, because they were dealt with almost entirely in committees. This method of considering them was beneficial rather than otherwise, as it promoted habits of business which were found useful when applied to public measures. He trusted that some such remedy as that suggested by Mr. Dudley Baxter would be adopted. He was surprised to hear the objectionable system of references to former Acts defended by Mr. Lumley. No one who had ever had to work out the Sanitary Acts from the Vestry point of view would advocate the continuation of such a system : and it could be shown that the chief part of that

which was now enacted by reference to twenty-six different Statutes might be effected as new matter in almost as many lines, certainly in as many clauses.

The PRESIDENT felt grateful to Mr. Janson for the paper which he had just read. He knew no subject of greater importance than the legislation of a great empire, under a representative government in three estates: the Crown, 475 hereditary or nominated Peers of the realm, and 652 elected Members of the House of Commons. No one would dispute for a moment the fact that the Houses of Parliament had consisted of a majority of the most eminent political men of the country: or further, that the existing Parliament probably contained men, on an average, excelling their predecessors. Yet with all this admirable material, judged by the results, our legislation is, as has been shown, quite unworthy not only of the science but of the good sense of the country. There is evidently a great waste of power, a want of organisation: political life demands the whole time and thought of the ablest men in the country; and if inducements are offered such men to enter Parliament, and to support the Government we may hope to see our laws compressed into a compact code intelligible to the community. Such papers as that of Mr. Janson show us that the country may count on the aid of the profession to which we are in so many ways indebted. You will, I know, thank him so heartily as to induce him to give us another paper on a kindred subject.

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## MISCELLANEA.

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*I.—The Dangers of the Money Market.*

FROM the *Saturday Review*, 14th June :—

“ Anybody who wishes to have a clear idea of the workings of what is called the money market should procure a little volume which Mr. Bagehot has just published under the title of *Lombard Street* (H. S. King and Co.), and he will there find the whole thing in a nutshell. Mr. Bagehot contends that the money market is as real and concrete as anything else, and can be described in as plain words, and he has certainly given a very graphic and interesting account of it. The subject is one, it is almost needless to say, on which Mr. Bagehot writes with the authority of a man who combines practical experience with scientific study. Without attempting to follow him in his description of the various processes and agencies which go to make up the money market, we propose merely to bring into notice some of the dangers of the present system which have struck us very forcibly in reading his book. Within a comparatively brief period a great development, we might almost say a revolution, has taken place in the banking system of the country. In the first place, the old-fashioned private banks would seem to be gradually disappearing. In 1810 there were forty private banks in Lombard Street admitted to the Clearing-house; there are now only thirteen, although in the interval the business of banking has enormously increased. As the old banks die out, no new ones take their place. It is recognised as hopeless to try to set up a new private bank. The successful management of a bank requires qualities for the continued transmission of which from one generation to another there is no security; and a private banker who does not manage his own bank stands in a dangerous position. Moreover, the competition of the joint stock banks is difficult to be withstood. It is perhaps idle to lament what cannot be helped; yet it is impossible to deny that the system of private banks furnished a certain guarantee of personal character which is almost necessarily wanting in all kinds of joint stock companies. The directorial management of the latter is undoubtedly their weak point. A daring and unscrupulous general manager can do almost what he likes if the directors let him, and there is no security that the directors are capable either of seeing through his game or holding him in. Even if the directors are really honest and competent men, their supervision of the affairs of the company must, to a great extent, be extremely superficial. Apart, however, from the personal administration of banks, there is a serious danger in the system on which they are now conducted—we mean the system of cutting down reserves to the lowest point compatible with current payments over the counter, and trusting to the Bank of England to support them on an emergency. Mr. Weguelin, who was Governor of the Bank of England during the panic of 1857, brought this feature of modern banking under the notice of Sir G. C. Lewis; and Mr. Bagehot also gives an emphatic warning on the subject. ‘If,’ said Mr. Weguelin, ‘the amount of the reserve kept by the Bank of England be contrasted with the reserve kept by the joint stock banks, a new and hitherto little considered source of danger to the credit of the country will present itself. The joint stock banks of London, judging by their published accounts, have

deposits to the amount of 30,000,000*l.* Their capital is not more than 3,000,000*l.*, and they have on an average 31,000,000*l.* invested in one way or another, leaving only 2,000,000*l.* as a reserve against all this mass of liabilities.' In order to bring out the full extent of the evil, Mr. Weguelin should have added that, while bankers generally trusted to the Bank of England, the Bank deemed itself to be at liberty to dispose of the reserves deposited with it as it chose. Since 1857 this state of things has certainly not improved.

"Mr. Bagehot describes Lombard Street as by far the greatest combination of economical power and economical delicacy which the world has ever seen; and he quotes a few figures which certainly give one a vivid and even startling impression of the largeness of the London loan-fund. The known deposits—that is, the deposits of banks which publish accounts—may be set down thus:—

	£
London (31st December, 1872) .....	120,000,000
Paris (27th February, 1873) .....	13,000,000
New York (February, 1873) .....	40,000,000
German Empire (31st January, 1873) .....	8,000,000

But the unknown deposits—the deposits concerning which no accounts are published—are also much greater in London than anywhere else. There is, in fact, more ready money available for employment in London at this moment than was ever before collected in the world. It is true, of course, as Mr. Bagehot remarks, that the deposits of bankers are not a strictly accurate measure of the resources of a money market. It is a matter of choice with people who have money where they will keep it, and in France and Germany, and other non-banking countries, there are vast sums which are privately hoarded up and not put in banks. But we are now speaking only of cash ready for investment, what Mr. Bagehot aptly calls 'money-market money.' The money which is not kept in banks is scattered about in small quantities in the hands of an infinite number of people. It is difficult to get at it at all, and it cannot be got at easily and quickly. But the English money is borrowable money, and may be had on the instant. It is only within a comparatively short time that the financial resources of London have reached this point, and they are still growing. In 1844 the liabilities of the four great London joint stock banks were 10,637,000*l.*; they are now more than 60,000,000*l.* The private deposits of the Bank of England have increased in the same period from 9,000,000*l.* to 18,000,000*l.* The explanation of this remarkable growth is not far to seek. In the first place, domestic banking has developed greatly. Almost everybody who has an income of a few hundreds a-year keeps a banking account now-a-days. Every little shopkeeper has his banker. In the next place, the relation between the country banks and the London banks is closer and more intimate than it used to be. The country bankers are constantly receiving large sums, but they keep as little as possible in their own cellars. The bulk of it is sent up to London, and there is consequently a steady flow of country money into the metropolis. The effect of the Franco-German war has also been to pour money into London. Paris has now lost most of its financial importance; the Reds have frightened away the capitalists, and London has now become the great bank and settling house of Europe. All exchange operations are centering more and more here; and though this pre-eminence has been partly gained through an external accident, it is founded on natural conditions, and will probably be maintained. The number of mercantile bills drawn upon London incalculably surpasses, as Mr. Bagehot remarks, those drawn on any other European city. 'London is the place which receives more than any other place, and pays more than any other place,' and therefore it is the natural clearing-house. It is probable, therefore, that the store of ready money in London will go on increasing rather than diminishing. The English have a far larger fund of this 'money-market money,' or loanable cash seeking investment than any other nation, and other nations find it convenient to send their reserves over here for employment. The English have a particularly quick eye for the profitable uses of money. They may not have great foresight in this respect, but

directly an opening is actually ready to be taken advantage of, they are pretty sure to see it. There could hardly be a more striking illustration of this than the trade of the Suez Canal. It was supposed that the canal would restore the oriental trade to the ports of Southern Europe; but in point of fact the English, who were to have been more or less ruined by it, have been the only people who have as yet got much good out of it. Up to the present time, the canal has been mainly used by the English, for the simple reason that the English had not only the quickness to see, as soon as the thing was done, what use could be practically made of it, but the ready money at hand to build the only kind of vessels which can use the canal profitably.

"All this tends to make London enormously rich; but riches have their dangers, and we think that few people will be able to follow Mr. Bagehot in his account of the dangers which at present threaten the London money market with altogether an easy mind. The wealth of Lombard Street is borrowed wealth. By far the greater proportion of it is held by bankers or others on short notice or on demand, and it might all, or nearly all, be asked for any afternoon. If it were asked for in any considerable quantity, would the bankers be able to meet the demand? That is really the root question, as the Germans would say, of the money market. And it is a question to which Mr. Bagehot certainly does not help us to any very hopeful or reassuring answer.

"Lombard Street is, of course, an organisation of credit, and it is important to observe how far credit is carried. The bankers receive the money of their customers, but they keep as little of it as possible lying by them. Bankers are both borrowers and lenders, and the money goes out almost as soon as it comes in. What money a bank cannot dispose of within its own sphere of operations, it passes on to some larger bank to be taken care of. The country bankers send their principal reserves to their London agents, and the London bankers send their reserves to the bank of England. The custody of large sums in hard cash entails much care and some cost, and the same reasons which make it convenient for a private person to have a banker make it convenient for bankers to keep an account with another bank if they can. The country bankers keep in their tills only the minimum of cash necessary for their current every-day business. They send the rest to London, invest part of it in securities, and keep the balance with the London bankers and bill-brokers. What the London bankers and bill-brokers cannot turn to account they deposit in the Bank of England. 'You always come back to the Bank of England at last,' says Mr. Bagehot. But then the Bank of England is a bank too—not exactly like other banks, but still doing a banking business, and lending out much of the money that comes in. It is clear, therefore, that, if all the depositors in the country happened to take it into their heads to claim their deposits on the same day, they would not and could not get them on demand. The greater part of the money would be scattered about in the hands of people who had obtained advances from the banks, and this could not be got at in a hurry. But of course there is practically no need to provide for such a contingency as this. It may be taken for granted that everybody will not want his money at the same moment. It is enough that the banks should have at their command such an amount of ready money as would enable them on a reasonable calculation of probabilities to tide over an emergency of this kind. A panic is only a name for a sudden demand upon the bankers for hard cash. People take fright, distrust the credit of their agents, and ask to have their money given over into their own hands, so that they may see for themselves that it is really there. The question is, what reserve of money is necessary in order to provide for a run of this kind? The country bankers trust to be able to get the money from London, and the London bankers trust to the Bank of England. In point of fact, however, the bankers' reserve funds are only in part to be found in the Bank of England. As soon as they are paid in there, the principal part of them at once goes out again into the hands of borrowers. 'It may be broadly stated,' says Mr. Bagehot, 'that no bank in London or out of it holds any considerable sum in hard cash or legal tender (above what is wanted for its daily business) except the banking department of the Bank of England.' And how much

does the Bank of England hold? Not more on an average of years than some 40 per cent. of its liabilities. There is no fixed rule as to the amount of this reserve. It is just what the Directors of the Bank choose to make it. They are under no pledge or engagement as to how much it shall be, nor have they ever committed themselves by the disclosure of the principles on which they profess to deal with it. The Bank of England, as everybody knows, is limited as to the amount of notes which it can issue on Government securities, the rest of its issue being represented by actual bullion; but it is under no restraint or conditions as to the amount of its banking reserve. This reserve is the foundation of the whole credit system of the country; for the traders depend on the banks, and the banks on the Bank of England, and thus it depends on the discretion or indiscretion of the directors of this one joint stock company for the time being whether the reserve shall be sufficient to meet the pressure of a panic, or, in other words, as Mr. Bagehot puts it, whether the country shall be solvent or insolvent. The Bank of England, it must be remembered, is a trading company, and the shareholders are by no means satisfied with their profits. The Bank of England earns only 9 per cent., while the London and Westminster Bank earns 20 per cent.; but one of the reasons why the dividend of the former is lower is that it keeps a reserve of some 40 per cent. of its deposits lying idle for the security of the latter, which thereupon cuts down its reserve to 13 per cent.

"It can hardly be denied that there is a real and serious danger in this state of things, but it is much easier to point out the evil than to devise a remedy. Mr. Bagehot seems to think that some sort of definite obligation should be imposed on the Bank in regard to the amount of its banking reserve, but he admits that he can suggest nothing more definite than an 'apprehensive minimum' which cannot be defined. On the other hand the directors of the Bank of England would probably argue that it is rather hard to expect them to keep a large reserve lying idle, in order to enable their rivals in business to beat them in dividends; and that the natural solution of the difficulty is that the banks which deposit their reserves with the Bank of England should make it worth the while of the latter to keep the money on hand for them if they object to its being lent out. The public at large, however, has an interest in the matter, and it is obvious that at present the public interest is not protected as it should be. The Bank of England occupies, it is true, to some extent, an artificial position, and when the worst comes to the worst there is always an opening for the Government to come to the rescue. But an organisation of credit which has to depend for its safety on the intervention of the Government cannot be said to be in a satisfactory condition."

## II.—*The English Pauper Roll at Lady-day.*

FROM the *Pall Mall Gazette*, 7th June:—

"It is very gratifying to find from Mr. Stansfeld's latest account of the pauperism of the country that at the close of the parochial year 1872-73 there was a marked decline in the numbers relieved when they are compared with the recipients on the poor-law union books at the same season of 1871-72. It is still more gratifying to know that the present diminution is not the first but the last of a brief series of annual reductions commencing with 1871. Reassuring, too, because the result, so far, of persistent causes. Three years ago the pauperism of springtide appears to have reached its highest point. At Lady-day, 1870, the number on the pauper roll—not counting lunatics in asylums nor vagrants relieved at the charge of the poor rate—was 1,046,000. The yearly diminution since is traceable through the following table:—

At Lady-day.	Number of Paupers.		
	In-door.	Out-door.	Total on the Relief Lists.
1870 .....	158,381	889,281	1,047,662
'71 .....	150,846	847,638	998,484
'72 .....	143,541	764,274	907,815
'73 .....	147,319	706,370	853,689

Turning our attention to the total number on the relief lists, it will be observed that at Lady-day, 1871, there was in comparison with Lady-day, 1870, a decrease of 49,000 paupers; similarly, on comparing 1872 with 1871, we find a decrease of 91,000, and now in 1873 as against 1872, a decrease of 54,000. On comparing 1873 with 1870 the aggregate diminution is found to be 194,000, or 18½ per cent. Collating the in-door numbers for the last mentioned years it will be seen that the decrease was only 11,000, or 7 per cent.; but that the out-door pauperism had diminished by 183,000, or 20½ per cent. in three years. Two causes have been in operation to effect this great weeding out of the relieving officers' lists: the increased demand for labour of all kinds, and the strenuous efforts made by Mr. Goschen and his successor at Gwydyr House to stimulate the guardians to a more vigilant administration of out-door relief—that specially demoralising portion of our poor law which the criminal pauper looks upon as his vested right. The next table shows that the diminution of pauperism has been general throughout the kingdom, but the rate of decrease varies between 1·4 per cent. and 13·1 per cent.

*Number of Paupers (except Lunatic Paupers in Asylum and Vagrants) in Receipt of Relief at Lady-day, 1873, compared with Lady-day, 1872.*

Divisions.	Number of Paupers Relieved at Lady-day, 1873.			Decrease as Compared with Corresponding Week of 1872.	Decrease per Cent.
	In-door.	Out-door.	Total.		
The Metropolis .....	37,566	79,083	116,649	1,626	1·4
South-Eastern .....	18,549	79,359	97,908	2,995	3·0
South Midland .....	10,014	62,389	72,403	4,788	6·2
Eastern .....	9,392	59,503	68,895	5,850	7·8
South-Western .....	11,911	91,930	103,841	6,666	6·0
West Midland .....	15,337	76,402	91,739	7,007	7·1
North Midland .....	6,451	42,223	48,674	3,438	6·6
North-Western .....	18,961	55,457	74,418	5,647	7·1
York .....	8,930	53,470	62,400	4,083	6·1
Northern.....	5,332	36,255	41,587	6,282	13·1
Welsh .....	4,876	70,299	75,175	5,744	7·1
Total of England....	147,319	706,370	853,689	54,126	6·0

Arranging the divisions according to the proportional magnitude of their decreases, it will be found that the Northern counties rank highest, being 13·1 per cent.; the Eastern counties, 7·8 per cent.; the West Midland, the North-Western, and the Welsh divisions each showing 7·1 per cent. decrease; The North Midland, 6·6 per cent.; the South Midland, 6·2 per cent.; Yorkshire, 6·1 per cent.; the South-Western, 6·0 per cent.; the South-Eastern counties, 3·0 per cent.; and lastly the Metropolis, which only decreased 1·4 per cent. It is noteworthy that Lancashire and Cheshire (North-Western Division) have lighter relief lists now than they had in the busy and prosperous times which in Lancashire immediately preceded the cotton famine. At Lady-day, 1860, the number for both counties was 79,782; hence, notwithstanding the increase of population in that district, the paupers at Lady-day last, as shown in the table above, were 74,418; less, that is to say, by 5,364, or 7 per cent."

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### III.—*The Local Taxation of England.*

THE following statistics are taken from the *Second Annual Report of the Local Government Board* :—

"The amount of the local taxes for the year 1870-71, is shown in round numbers by the following figures:—

	£
I. Rates .....	17,406,000
II. Tolls and dues .....	3,860,000
III. Duties .....	<u>314,000</u>
Total impost .....	<u>21,580,000</u>

"The other sources of revenue applicable to local administrative wants are briefly shown by the following synopsis, which also exhibits the expenditure and the indebtedness of each class of tax:—

#### *Summary of the Local Taxation of England in 1870-71.*

Source of Revenue.	Amount of Impost.	Received from the Imperial Taxes and other Sources, including Loans.	Total Revenue.	Total Expenditure.	Loans Outstanding at the Close of the respective Accounts.
Rates .....	£ 17,405,711	£ 7,287,150	£ 24,692,861	£ 24,324,350	£ 38,249,508
Tolls and dues....	3,859,974	1,342,034	5,202,008	5,302,393	22,968,283
Duties .....	314,290	500	314,790	321,287	2,240,000
Grand total....	21,579,975	8,629,684	30,209,659	29,948,030	63,457,791

"In addition to the large outstanding debt as shown above, the unliquidated loans of the City of London in 1869 amounted to 4,580,350l.; this raises the aggregate indebtedness of the local authorities to 68,038,241l."

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## REGISTRATION OF THE UNITED KINGDOM.

## No. I.—ENGLAND AND WALES.

MARRIAGES—QUARTER ENDED DECEMBER, 1872.

BIRTHS AND DEATHS—QUARTER ENDED MARCH, 1873.

A.—*Serial Table of MARRIAGES, BIRTHS, and DEATHS, returned in the Years 1873-67, and in the QUARTERS of those Years.*

Calendar YEARS, 1873-67:—Numbers.

Years .....	'73.	'72.	'71.	'70.	'69.	'68.	'67.
Marriages No.	—	200,837	190,112	181,655	176,970	176,962	179,154
Births.....,,	—	824,646	797,428	792,787	773,381	786,858	768,349
Deaths ....,,	—	492,065	514,879	515,329	494,828	480,622	471,073

QUARTERS of each Calendar Year, 1873-67.

(I.) MARRIAGES:—Numbers.

Qrs. ended last day of	'73.	'72.	'71.	'70.	'69.	'68.	'67.
March..... No.	—	40,557	36,305	36,455	37,752	36,696	36,441
June .....,,	—	50,197	48,831	46,720	43,202	45,364	45,589
September ,,	—	49,806	46,536	43,900	43,978	43,509	44,086
December ,,	—	60,277	58,440	54,580	52,038	51,393	53,038

(II.) BIRTHS:—Numbers.

Qrs. ended last day of	'73.	'72.	'71.	'70.	'69.	'68.	'67.
March..... No.	216,367	208,737	209,523	206,366	203,775	198,584	194,763
June .....,,	—	208,711	201,165	203,615	188,618	202,839	199,660
September ,,	—	201,105	193,271	192,521	190,394	192,583	190,782
December ,,	—	206,093	193,469	190,285	190,594	192,852	183,144

(III.) DEATHS:—Numbers.

Qrs. ended last day of	'73.	'72.	'71.	'70.	'69.	'68.	'67.
March..... No.	132,626	134,992	138,393	143,773	133,096	119,676	134,008
June .....,,	—	120,914	120,793	121,128	118,947	110,010	112,355
September ,,	—	118,786	121,332	124,297	114,644	130,482	108,513
December ,,	—	117,373	134,361	126,131	128,141	120,454	116,197

*Annual Rates of MARRIAGES, BIRTHS, and DEATHS, per 1,000 PERSONS  
LIVING in the Years 1873-67, and the QUARTERS of those Years.*

*Calendar YEARS, 1873-67:—General Ratios.*

YEARS.....	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
Estmtd. Popln. of England in thousands in middle of each Year....	23,356,	—	23,068,	22,783,	22,501,	22,223,	21,949,	21,678,
Persons Mar- ried .....	—	16·8	17·4	16·7	16·1	15·9	16·1	16·5
Births .....	—	35·3	35·7	35·0	35·2	34·8	35·8	35·4
Deaths.....	—	22·6	21·3	22·6	22·9	22·3	21·9	21·7

*QUARTERS of each Calendar Year, 1873-67.*

(I.) PERSONS MARRIED:—Ratio per 1,000.

Qrs. ended last day of	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
March .....	—	13·8	14·1	12·9	13·2	13·8	13·5	13·7
June.....	—	17·1	17·5	17·2	16·7	15·6	16·6	16·9
September .....	—	16·4	17·1	16·2	15·5	15·7	15·8	16·2
December .....	—	19·9	20·7	20·4	19·2	18·6	18·6	19·5

(II.) BIRTHS:—Ratio per 1,000.

Qrs. ended last day of	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
March .....	37·6	37·0	36·3	37·3	37·3	37·3	36·4	36·6
June.....	—	36·3	36·3	35·5	36·4	34·1	37·2	37·1
September .....	—	34·2	34·6	33·7	34·0	34·1	34·9	35·0
December .....	—	34·2	35·4	33·7	33·6	34·1	35·0	33·6

(III.) DEATHS:—Ratio per 1,000.

Qrs. ended last day of	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
March .....	23·0	25·2	23·5	24·7	26·0	24·4	21·9	25·2
June.....	—	21·8	21·0	21·3	21·6	21·5	20·2	20·9
September .....	—	21·4	20·4	21·1	22·0	20·5	23·7	19·9
December .....	—	22·2	20·2	23·4	22·3	22·9	21·8	21·3

B.—Comparative Table of CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE in each of the Nine QUARTERS ended March, 1873.

1 Quarters ending	2 Average Price of Consols (for Money).	3 Average Rate of Bank of England Dis- count.	4 Average Price of Wheat per Quarter in England and Wales.	5 Average Prices of Meat per lb. at the Metropolitan Meat Market (by the Carcase), with the Mean Prices.		7 Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	8 Pauperism.		10 Mean Tem- pera- ture.
				Beef.	Mutton.		In-door.	Out-door.	
1871									°
Mar. 31	£ 92 $\frac{1}{8}$	2·7	s. d. 53 7	d. d. d. 5—7 $\frac{3}{4}$ 6 $\frac{3}{8}$	d. d. d. 5 $\frac{1}{4}$ —7 $\frac{3}{4}$ 6 $\frac{1}{2}$	s. s. s. 75—100 87 $\frac{1}{2}$	160,968	879,574	40·2
June 30	93 $\frac{3}{8}$	2·5	59 9	5 $\frac{1}{4}$ —7 $\frac{3}{4}$ 6 $\frac{1}{2}$	5 $\frac{1}{2}$ —8 $\frac{1}{2}$ 7	51—76 63 $\frac{1}{2}$	140,357	806,186	51·5
Sept. 30	93 $\frac{3}{8}$	2·2	57 9	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	5 $\frac{3}{4}$ —9 7 $\frac{1}{2}$	60—77 68 $\frac{1}{2}$	132,067	769,764	61·3
Dec. 31	93	4·2	56 3	5—7 $\frac{3}{4}$ 6 $\frac{1}{2}$	5 $\frac{1}{2}$ —8 $\frac{1}{4}$ 6 $\frac{3}{4}$	75—104 89 $\frac{1}{2}$	141,027	759,666	41·8
1872									
Mar. 31	92 $\frac{4}{8}$	3·0	55 4	5—7 $\frac{1}{4}$ 6 $\frac{1}{8}$	5 $\frac{3}{4}$ —8 $\frac{1}{2}$ 7 $\frac{1}{8}$	80—120 100	149,599	776,793	43·6
June 30	92 $\frac{7}{8}$	4·0	56 8	5 $\frac{1}{4}$ —7 $\frac{1}{2}$ 6 $\frac{3}{8}$	6—8 $\frac{3}{4}$ 7 $\frac{3}{8}$	124—150 137	134,412	724,463	52·8
Sept. 30	92 $\frac{4}{8}$	3·5	58 11	5 $\frac{1}{4}$ —8 6 $\frac{5}{8}$	6 $\frac{1}{4}$ —9 $\frac{1}{4}$ 7 $\frac{3}{4}$	105—133 119	126,377	681,987	61·1
Dec. 31	92 $\frac{2}{8}$	5·9	57 3	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	6—8 $\frac{1}{2}$ 7 $\frac{1}{4}$	153—187 170	138,648	675,598	45·3
1873									
Mar. 31	92 $\frac{3}{8}$	3·9	55 10	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	6 $\frac{1}{4}$ —9 7 $\frac{5}{8}$	179—235 207	150,392	703,357	39·4

C.—General Average Death-Rate Table:—Annual Rate of Mortality to 1,000 of the Population in the Eleven Divisions of England.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1861-70.	Year 1872.	1872. Quarters ending				1873. March.
			March.	June.	Sept.	Dec.	
England and Wales .....	22·4	21·3	23·5	21·0	20·4	20·2	23·0
I. London .....	24·3	21·5	24·0	20·7	21·4	19·8	22·7
II. South-Eastern counties .....	19·1	17·3	19·2	17·0	16·9	16·2	18·8
III. South Midland ,.. .....	20·2	18·9	20·8	18·4	18·3	18·0	20·8
IV. Eastern counties .....	20·1	18·6	21·1	17·8	17·5	18·1	20·9
V. South-Western counties .....	19·9	18·6	21·4	19·1	16·1	17·8	21·2
VI. West Midland ,.. .....	21·8	21·1	22·9	21·1	19·6	20·8	23·6
VII. North Midland ,.. .....	20·8	21·0	21·9	21·3	21·4	19·3	22·9
VIII. North-Western ,.. .....	26·3	24·6	26·6	23·8	24·0	23·8	26·9
IX. Yorkshire .....	24·0	23·9	25·5	23·7	23·9	22·5	23·8
X. Northern counties .....	22·7	24·0	27·3	23·3	22·9	22·3	23·8
XI. Monmouthshire and Wales	21·6	20·9	23·9	21·9	18·0	19·9	23·8

Note.—The rates of mortality in this table have been calculated on populations based upon the recently enumerated numbers, and will not therefore correspond with those published in previous returns.

D.—*Special Average Death-Rate Table:—ANNUAL RATE OF MORTALITY per 1,000 in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1873-71.*

	Area in Statute Acres.	Population Enumerated.	Quarters ending	Annual Rate of Mortality per 1,000 in each Quarter of the Years			
				1873.	Mean '63-'72.	1872.	1871.
				1871.	—	—	—
In 130 Districts, and 59 Sub-districts, comprising the <i>Chief Towns</i> .....	3,183,965	12,892,982	March .. June .... Sept. .... Dec. .... Year ....	24·4 — — — —	27·3 23·4 24·1 24·8 24·9	25·4 22·6 23·0 22·0 23·3	26·7 22·9 24·0 26·4 25·0
In the remaining Dis- tricts and Sub-districts of England and Wales, comprising chiefly <i>Small Towns</i> and <i>Country Parishes</i> .....	34,135,256	9,819,284	March .. June .... Sept. .... Dec. ....	21·1 — — —	22·6 19·7 17·7 18·7	20·9 18·9 17·0 17·7	22·0 19·1 17·4 19·5

*Note.*—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year, 92 days. For this inequality a correction has been made in these calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

E.—*Special Town Table:—POPULATION; BIRTHS, DEATHS; MEAN TEMPERATURE and RAINFALL in the First Quarter of 1873, in TWENTY-ONE Large Towns.*

Cities, &c.	Estimated Population in the Middle of the Year 1873.	Births in 13 Weeks ending 29th Mar., 1873.	Deaths in 13 Weeks ending 29th Mar., 1873.	Annual Rate to 1,000 Living during the 13 Weeks ending 29th March.		Mean Temperature in 13 Weeks ending 29th March, 1873.	Rainfall in Inches in 13 Weeks ending 29th Mar., 1873.
				Births.	Deaths.		
Total of 21 towns in U. K.	7,507,575	73,910	47,950	39·5	25·6	39·0	6·78
London .....	3,356,073	32,094	18,970	38·4	22·7	39·6	5·73
Portsmouth .....	118,280	1,067	532	36·2	18·1	39·4	—
Norwich .....	81,677	717	532	35·2	26·1	37·9	5·72
Bristol .....	189,648	1,845	1,167	39·0	24·7	39·8	—
Wolverhampton .....	70,084	762	453	43·6	25·9	38·6	6·16
Birmingham .....	355,540	3,748	2,210	42·3	24·9	39·0	8·90
Leicester .....	102,694	1,065	643	41·6	25·1	38·7	5·66
Nottingham .....	89,557	795	494	35·6	22·1	38·7	5·25
Liverpool .....	505,274	5,042	3,458	40·1	27·5	39·8	5·21
Manchester .....	354,057	3,757	3,009	42·6	34·1	—	—
Salford .....	130,468	1,489	1,011	45·8	31·1	39·1	7·11
Oldham .....	85,141	910	653	42·9	30·8	—	6·60
Bradford .....	156,609	1,653	1,016	42·4	26·0	39·5	6·97
Leeds .....	272,619	2,905	1,834	42·8	27·0	39·2	6·46
Sheffield .....	254,352	2,767	1,613	43·7	25·5	38·6	6·78
Hull .....	128,125	1,411	813	44·2	25·5	38·2	—
Sunderland .....	102,450	1,260	678	49·4	26·6	—	—
Newcastle-on-Tyne .....	133,246	1,413	977	42·6	29·4	38·3	—
Edinburgh .....	208,553	1,768	1,262	34·0	24·3	—	—
Glasgow .....	498,462	5,101	4,023	41·1	32·4	37·8	11·64
Dublin .....	314,666	2,341	2,602	29·9	33·2	40·4	—

F.—*Divisional Table:—MARRIAGES Registered in Quarters ended 31st December, 1872-70; and BIRTHS and DEATHS in Quarters ended 31st March, 1873-71.*

1  DIVISIONS. (England and Wales.)	2  AREA* in Statute Acres.	3  POPULATION, 1871. (Persons.)	4  MARRIAGES in Quarters ended 31st December.		
			4 1872.	5 1871.	6 1870.
			No.	No.	No.
ENGLD. & WALES.... <i>Totals</i>	37,319,221	22,712,266	60,277	58,498	54,576
i. London .....	75,362	3,254,260	9,184	9,226	8,387
ii. South-Eastern .....	3,994,431	2,167,726	4,866	4,798	4,663
iii. South Midland .....	3,201,325	1,442,654	3,616	3,408	2,993
iv. Eastern .....	3,211,441	1,218,728	3,227	3,246	3,031
v. South-Western .....	4,981,170	1,880,777	3,762	3,864	3,710
vi. West Midland .....	3,945,460	2,720,669	7,392	7,367	6,912
vii. North Midland .....	3,535,445	1,406,935	3,897	3,752	3,306
viii. North-Western .....	1,998,914	3,389,044	9,324	8,980	8,282
ix. Yorkshire .....	3,702,384	2,395,569	7,042	6,705	6,279
x. Northern .....	3,547,947	1,414,234	4,115	3,707	3,573
xi. Monmthsh. & Wales	5,125,342	1,421,670	3,852	3,445	3,440

7  DIVISIONS. (England and Wales.)	8  BIRTHS in Quarters ended 31st March.	9  10	11  DEATHS in Quarters ended 31st March.		
			1873.	1872.	1871.
			No.	No.	No.
ENGLD. & WALES.... <i>Totals</i>	216,367	208,737	209,787	132,626	134,992
i. London .....	32,094	30,650	30,728	18,970	19,801
ii. South-Eastern .....	18,376	18,179	18,244	10,436	10,608
iii. South Midland .....	13,129	12,386	12,817	7,579	7,592
iv. Eastern .....	10,435	10,206	10,590	6,360	6,457
v. South-Western .....	15,111	15,600	15,467	9,880	10,073
vi. West Midland .....	26,838	26,041	26,176	16,215	15,759
vii. North Midland .....	12,755	12,727	12,730	8,107	7,763
viii. North-Western .....	35,227	33,871	33,221	23,247	22,920
ix. Yorkshire .....	23,822	22,464	22,876	14,624	15,563
x. Northern .....	15,747	14,009	14,204	8,684	9,891
xi. Monmthsh. & Wales	12,833	12,604	12,734	8,524	8,565

\* These are revised figures, and will be found to differ somewhat from those hitherto published.

## G.—General Meteorological Table, Quarter ended March, 1873.

[Abstracted from the particulars supplied to the Registrar-General by JAMES GLAISHER, Esq., F.R.S., &amp;c.]

1873.	Temperature of										Elastic Force of Vapour.	Weight of Vapour in a Cubic Foot of Air.		
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames					
	Mean.	Diff. from Average of 102 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.				
Jan. ...	° 42·1	+5·8	° +4·1	40·4	+3·7	° 38·2	° +3·5	° 8·8	° -1·6	° 42·5	In. .231	In. +·030	Gr. 2·7	Gr. +0·4
Feb. ...	34·3	-4·3	-5·0	32·8	-4·8	30·3	-4·7	8·4	-3·0	36·4	.169	-·037	2·0	-0·4
Mar. ...	41·9	+0·9	+0·4	40·2	+1·0	38·2	+2·0	16·1	+1·5	42·1	.231	+·016	2·6	+0·1
Mean ...	39·4	+0·8	-0·2	37·8	0·0	35·6	+0·3	11·1	-1·0	40·3	.210	+·003	2·4	0·0

1873.	Months.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.	Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass.				
		Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.			At or below 30°.	Between 30° and 40°.	Above 40°.	Number of Nights it was	
		Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.			At or below 30°.	Between 30° and 40°.	Above 40°.	Lowest Reading at Night.	Highest Reading at Night.
Jau. ...	87	- 1	In. 29·576	In. -·173	Gr. 546	Gr. - 8	In. 2·5	In. +0·6	Miles. 413	10	17	4	° 18·5	° 43·9
Feb. ...	85	0	29·901	+ ·104	561	+ 8	1·9	+0·3	281	20	8	0	19·5	40·0
Mar. ...	87	+ 5	29·623	- ·126	547	- 3	1·3	-0·4	295	23	8	0	18·2	39·5
Mean ...	86	+ 1	29·700	- ·065	551	- 1	Sum 5·7	Sum +0·2	Mean 330	Sum 53	Sum 33	Sum 4	Lowest 18·2	Highest 43·9

*Note.*—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

The mean temperature of January was  $42^{\circ}\cdot 1$ , being  $5^{\circ}\cdot 8$  above the average of the preceding 102 years, and higher than in any year back to 1866 and then again to 1853, the temperature in those years being respectively  $42^{\circ}\cdot 6$  and  $42^{\circ}\cdot 4$ .

The mean temperature of February was  $34^{\circ}\cdot 3$ , being  $4^{\circ}\cdot 3$  lower than the average of the preceding 102 years, and lower than in any previous year back to 1855, when  $29^{\circ}\cdot 4$  was recorded.

The mean temperature of March was  $41^{\circ}\cdot 9$ , being  $0^{\circ}\cdot 9$  higher than the average of the preceding 102 years, lower than in 1872 and 1871, but higher than in 1870 and 1869.

The mean high day temperatures were respectively  $3^{\circ}\cdot 8$  and  $1^{\circ}\cdot 6$  higher than their averages in January and March, but  $6^{\circ}\cdot 3$  lower in February.

The mean low night temperatures were higher than their respective averages in January and March by  $4^{\circ}\cdot 6$  and  $0^{\circ}\cdot 1$ , but lower in February by  $3^{\circ}\cdot 3$ .

Therefore the days and nights were warm in January and March, but cold in February.

## H.—Special Meteorological Table, Quarter ended 31st March, 1873.

1 NAMES OF STATIONS.	2 Mean Pressure of Dry Air reduced to the Level of the Sea.	3 Highest Reading of the Thermo- meter.	4 Lowest Reading of the Thermo- meter.	5 Range of Tem- perature in the Quarter.	6 Mean Monthly Range of Tem- perature.	7 Mean Daily Range of Tem- perature.	8 Mean Tem- perature of the Air.	9 Mean Degree of Hu- midity.
	in.	°	°	°	°	°	°	
Guernsey.....	29·617	57·0	31·5	25·5	21·5	8·0	42·9	91
Osborne .....	29·651	63·3	26·4	36·9	27·0	10·1	40·7	90
Barnstaple .....	29·631	67·0	28·5	38·5	27·7	9·7	42·7	85
Royal Observatory	29·666	64·6	25·0	39·6	30·1	11·1	39·5	86
Royston .....	29·692	68·2	21·9	46·3	32·3	12·8	38·9	87
Norwich .....	29·657	58·0	21·5	36·5	29·2	10·7	38·2	93
Llandudno .....	29·630	68·7	25·6	43·1	29·7	10·1	41·8	80
Derby .....	29·642	61·0	22·0	39·0	31·0	10·3	38·8	88
Stonyhurst .....	29·675	60·7	12·3	48·4	32·8	9·8	38·6	86
Leeds .....	29·650	62·0	15·0	47·0	33·3	12·2	39·0	81
North Shields.....	29·678	54·6	17·7	36·9	26·7	8·3	38·6	86

10 NAMES OF STATIONS.	11	12	13	14	15	16 Mean Amount of Cloud.	17	18	
	WIND.						RAIN.		
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount Collected.	
		N.	E.	S.	W.			in.	
Guernsey.....	1·5	7	8	8	7	6·2	57	13·80	
Osborne .....	0·2	9	7	7	7	7·4	49	9·49	
Barnstaple .....	—	3	6	13	8	5·2	49	11·49	
Royal Observatory	0·6	7	8	7	8	7·5	41	5·71	
Royston .....	—	7	5	9	8	7·3	49	6·45	
Norwich .....	—	7	7	7	9	—	42	5·83	
Llandudno .....	0·7	4	7	6	13	7·1	45	9·13	
Derby .....	—	6	6	9	9	—	39	4·87	
Stonyhurst .....	—	6	8	7	9	7·6	69	10·39	
Leeds .....	1·4	8	7	5	10	8·4	51	5·53	
North Shields.....	1·8	8	6	7	9	6·8	61	4·79	

## No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER  
ENDED 31ST MARCH, 1873.

I.—*Serial Table:—Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Population estimated to the Middle of each Year, also the Number during each Quarter of the Years 1873-69 inclusive.*

	1873.		1872.		1871.		1870.		1869.	
	Number.	Per Cent.								
<b>1st Quarter—</b>										
Births .....	30,210	3·52	29,506	3·47	28,902	3·43	28,674	3·44	28,429	3·44
Deaths.....	21,443	2·50	21,245	2·50	19,756	2·34	22,184	2·66	20,431	2·47
Marriages ..	6,618	0·77	5,820	0·68	5,415	0·64	5,631	0·67	5,291	0·64
<b>Mean Temperature }</b>	38°·1		40°·7		39°·1		36°·9		40°·0	
<b>2nd Quarter—</b>										
Births .....	—	—	30,726	3·61	30,583	3·63	30,645	3·67	29,472	3·56
Deaths.....	—	—	19,045	2·24	18,715	2·22	17,984	2·15	19,449	2·35
Marriages ..	—	—	6,398	0·75	5,946	0·70	5,754	0·69	5,596	0·67
<b>Mean Temperature }</b>	—		49°·2		48°·7		51°·0		48°·4	
<b>3rd Quarter—</b>										
Births .....	—	—	29,181	3·43	28,689	3·40	28,272	3·39	27,646	3·33
Deaths.....	—	—	16,692	1·96	16,835	2·00	16,555	2·03	16,532	2·00
Marriages ..	—	—	5,891	0·69	5,424	0·64	5,301	0·63	4,870	0·59
<b>Mean Temperature }</b>	—		55°·8		56°·3		57°·1		56°·4	
<b>4th Quarter—</b>										
Births .....	—	—	29,460	3·46	27,953	3·32	27,832	3·26	27,848	3·37
Deaths.....	—	—	18,759	2·20	19,338	2·29	17,344	2·08	19,377	2·34
Marriages ..	—	—	7,471	0·88	7,181	0·85	7,102	0·85	6,326	0·76
<b>Mean Temperature }</b>	—		41°·8		41°·3		39°·6		40°·9	
<b>Year—</b>										
Population.	3,430,923		3,399,226		3,367,922		3,336,707		3,305,885	
Births .....	—	—	118,873	3·49	116,127	3·45	115,423	3·46	113,395	3·41
Deaths.....	—	—	75,741	2·22	74,644	2·22	74,067	2·22	75,789	2·29
Marriages ..	—	—	25,580	0·75	23,966	0·71	23,788	0·71	22,083	0·66

**II.—Special Average Table:—Number of Births, Deaths, and Marriages in Scotland and in the Town and Country Districts during the Quarter ending 31st March, 1873, and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.**

Registration Groups of Districts.	Population.		Total Births.			Illegitimate Births.		
	Census, 1871.	Estimated to Middle of 1873.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND .....	3,360,018	3,430,923	30,210	3·52	28	2,801	9·3	10·8
Principal towns ....	1,068,556	1,114,907	10,633	3·81	26	973	9·1	10·9
Large     ,"....	337,469	352,736	3,567	4·04	25	264	7·4	13·5
Small     ,"....	772,875	786,031	7,165	3·64	27	620	8·6	11·5
Mainland rural ....	1,049,114	1,046,283	8,003	3·06	33	895	11·2	8·9
Insular     ,"....	132,004	130,966	842	2·57	39	49	5·8	17·2

Registration Groups of Districts.	Population.		Deaths.			Marriages.		
	Census, 1871.	Estimated to Middle of 1872.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND .....	3,360,018	3,430,923	21,443	2·50	40	6,618	0·77	129
Principal towns ....	1,068,556	1,114,907	8,090	2·90	34	2,655	0·95	105
Large     ,"....	337,469	352,736	2,510	2·85	35	750	0·85	117
Small     ,"....	772,875	786,031	4,810	2·45	41	1,520	0·77	129
Mainland rural ....	1,049,114	1,046,283	5,356	2·05	49	1,435	0·55	182
Insular     ,"....	132,004	130,966	677	2·07	48	258	0·79	127

**III.—Bastardy Table:—Proportion of Illegitimate in every Hundred Births in the Divisions and Counties of Scotland, during the Quarter ending 31st March, 1873.**

Divisions.	Per Cent. of Illegiti- mate.	Counties.	Per Cent. of Illegiti- mate.	Counties.	Per Cent. of Illegiti- mate.	Counties.	Per Cent. of Illegiti- mate.
SCOTLAND .....	9·3						
Northern .....	6·6	Shetland ....	0·8	Forfar .....	10·7	Lanark.....	8·5
North-Western	7·7	Orkney .....	4·0	Perth .....	9·1	Linlithgow .	9·4
North-Eastern	14·3	Caithness ....	11·5	Fife .....	7·8	Edinburgh .	7·8
East Midland ..	9·4	Sutherland....	6·9	Kinross .....	21·7	Haddington	9·3
West Midland.	7·5	Ross and {	3·8	Clackman- } nan .....	4·7	Berwick ....	9·5
South-Western	8·1	Inverness ....	11·0	Stirling .....	8·0	Peebles.....	10·4
South-Eastern.	8·2	Nairn .....	10·8	Dumbarton ..	6·3	Selkirk .....	8·1
Southern .....	15·4	Elgin .....	20·1	Argyll .....	8·0	Roxburgh ..	12·4
		Banff .....	15·0	Bute .....	7·3	Dumfries ....	13·8
		Aberdeen ....	13·6	Renfrew.....	6·6	Kirkcud- } bright ..	18·3
		Kincardine....	12·7	Ayr.....	7·9	Wigtown ....	19·6

**IV.—Divisional Table:—MARRIAGES, BIRTHS, and DEATHS Registered in the Quarter ended 31st March, 1873.**

1 DIVISIONS. (Scotland)	2 AREA in Statute Acres.	3 POPULATION, 1871. (Persons.)	4 Marriages.	5 Births.	6 Deaths.
		No.	No.	No.	No.
<b>SCOTLAND .....</b>	<b>Totals</b>	<b>19,639,377</b>	<b>3,360,018</b>	<b>6,618</b>	<b>30,210</b>
I. Northern .....	2,261,622	127,191	191	697	622
II. North-Western.....	4,739,876	166,351	285	1,101	903
III. North-Eastern .....	2,429,594	393,199	515	3,187	1,949
IV. East Midland .....	2,790,492	559,676	1,035	4,584	3,316
V. West Midland .....	2,693,176	251,088	462	2,090	1,537
VI. South-Western.....	1,462,397	1,183,218	2,894	12,795	9,034
VII. South-Eastern .....	1,192,524	475,523	950	4,189	2,888
VIII. Southern .....	2,069,696	203,772	286	1,567	1,194

**No. III.—GREAT BRITAIN AND IRELAND.**

*SUMMARY of MARRIAGES, in the Quarter ended 31st December, 1872; and BIRTHS and DEATHS, in the Quarter ended 31st March, 1873.*

COUNTRIES.	[000's omitted].		Marriages.	Per 1,000 of Population.	Births.	Per 1,000 of Population.	Deaths.	Per 1,000 of Population.
	Area in Statute Acres.	Popula- tion, 1871. (Persons.)						
England and Wales .....	37,319,	22,712,	60,277	2·7	216,367	9·5	132,626	5·8
Scotland .....	19,639,	3,360,	7,471	2·2	30,210	9·0	21,443	6·4
Ireland .....	20,323,	5,403,	5,858	1·1	38,823	7·2	30,798	5·7
<b>GREAT BRITAIN AND IRELAND }</b>	<b>77,281,</b>	<b>31,475,</b>	<b>73,606</b>	<b>2·3</b>	<b>285,400</b>	<b>9·0</b>	<b>184,867</b>	<b>5·9</b>

*Note.*—The numbers against Ireland represent the marriages, births, and deaths that the local registrars have *succeeded* in recording; but how far the registration approximates to absolute completeness, does not at present appear to be known. It will be seen that the Irish ratios of births and marriages are under those of England and Scotland.—ED. S. J.

**Trade of United Kingdom, 1872-71-70.**—*Distribution of Exports\* from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (excluding Gold and Silver), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	Whole Years.					
	1872.		1871.		1870.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
<b>I.—FOREIGN COUNTRIES:</b>						
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	36,974,	12,089,	33,664,	10,479,	32,302,	11,032,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	45,494,	54,000,	46,827,	47,762,	40,964,	36,071,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries) .....	56,206,	24,788,	42,404,	24,354,	47,535,	17,266,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	7,257,	9,887,	8,063,	9,314,	6,347,	8,927,
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	22,827,	15,671,	24,393,	13,454,	21,799,	16,400,
Northern Africa; viz., Tripoli, Tunis, Algeria and Morocco .....	1,165,	420,	1,009,	365,	553,	424,
Western Africa .....	2,011,	1,090,	1,942,	1,029,	1,759,	947,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorua Islands.....	141,	255,	196,	142,	80,	191,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands .....	2,298,	1,171,	2,028,	1,332,	1,798,	1,724,
South Sea Islands .....	116,	—	76,	23,	100,	50,
China, including Hong Kong .....	14,613,	11,491,	12,062,	10,986,	10,002,	11,160,
United States of America .....	54,665,	40,738,	60,066,	34,229,	49,805,	28,335,
Mexico and Central America .....	1,561,	1,131,	1,453,	1,359,	1,353,	1,271,
Foreign West Indies and Hayti.....	6,025,	4,682,	3,531,	4,075,	5,799,	3,962,
South America (Northern), New Granada, Venezuela, and Ecuador .....	1,380,	3,761,	1,364,	3,006,	1,127,	2,336,
" (Pacific), Peru, Bolivia, Chili, and Patagonia .....	10,701,	6,010,	8,160,	4,210,	8,841,	4,453,
" (Atlantic) Brazil, Uruguay, and Buenos Ayres .....	12,769,	13,221,	9,838,	9,824,	8,618,	8,516,
Whale Fisheries; Grnlnd., Davis' Straits, Southn. Whale Fishery, & Falkland Islands .....	154,	18,	147,	12,	215,	7,
Total—Foreign Countries .....	276,357,	200,423,	257,223,	175,955,	238,997,	153,072,
<b>II.—BRITISH POSSESSIONS:</b>						
British India, Ceylon, and Singapore .....	40,697,	21,934,	36,877,	20,866,	31,056,	22,548,
Austral. Cols.—N. So. W., Viet., and Queensld. " " So. Aus., W. Aus., Tasm., and N. Zealand .....	10,381,	10,063,	9,002,	7,118,	10,219,	7,247,
British North America .....	5,628,	4,062,	5,515,	2,916,	3,857,	2,655,
" W. Indies with Btsh. Guiana & Honduras .....	9,086,	10,234,	9,258,	8,296,	8,513,	6,801,
Cape and Natal .....	6,629,	3,490,	7,152,	3,161,	6,045,	3,522,
Brt. W. Co. of Af., Ascension and St. Helena .....	3,720,	3,701,	2,876,	2,198,	2,875,	1,867,
Mauritius .....	492,	786,	729,	698,	405,	686,
Channel Islands .....	1,555,	561,	836,	503,	872,	483,
" .....	625,	707,	567,	808,	457,	760,
Total—British Possessions .....	78,813,	55,538,	72,812,	46,564,	64,299,	46,569,
General Total .....	£ 355,170,	255,961,	330,035,	222,519,	303,294,	199,641,

\* i.e., British and Irish produce and manufactures.

**IMPORTS.—(United Kingdom.)—First Two Months (January—February), 1873-72-71-70-69.** — *Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Two Months.)	[000's omitted.]	1873.	1872.	1871.	1870.	1869.
FOREIGN ARTICLES IMPORTED.						
RAW MATLS.—Textile, &c.	Cotton Wool .....	11,297,	13,273,	13,387,	8,032,	6,702,
	Wool (Sheep's) ..	3,731,	3,507,	2,307,	1,465,	1,667,
	Silk* .....	2,218,	2,359,	2,269,	2,813,	2,296,
	Flax .....	590,	615,	226,	502,	408,
	Hemp .....	6,246,	1,021,	686,	382,	364,
	Indigo .....	637,	1,135,	774,	348,	377,
		24,719,	21,910,	19,649,	13,542,	11,814,
" "	Various.	Hides .....	878,	998,	530,	234,
" "		Oils .....	612,	676,	789,	364,
" "		Metals .....	1,245,	1,929,	1,345,	429,
" "		Tallow .....	364,	520,	618,	221,
" "		Timber .....	744,	489,	338,	190,
" "			3,843,	4,612,	3,620,	1,438,
" "	Agrebl.	Guano .....	174,	158,	651,	253,
" "		Seeds .....	1,175,	1,948,	1,389,	229,
" "			1,349,	2,106,	2,040,	482,
" "						492,
TROPICAL, &c., PRODUCE.	Tea .....	2,177,	2,749,	3,063,	2,229,	2,430,
	Coffee .....	689,	553,	482,	138,	283,
	Sugar & Molasses	2,094,	3,347,	2,171,	1,859,	1,525,
	Tobacco .....	404,	411,	456,	128,	141,
	Rice .....	460,	300,	174,	44,	224,
	Fruits .....	422,	475,	961,	281,	305,
	Wines .....	1,128,	1,147,	900,	661,	745,
	Spirits .....	440,	497,	641,	413,	351,
		7,814,	9,479,	8,848,	5,753,	6,004,
FOOD .....	Grain and Meal.	8,349,	6,661,	4,540,	4,700,	6,122,
	Provisions .....	3,010,	3,257,	2,495,	1,607,	1,639,
		11,359,	9,918,	7,035,	6,307,	7,761,
Remainder of Enumerated Articles ....		933,	6,167,	4,129,	1,668,	2,044,
TOTAL ENUMERATED IMPORTS ....		50,017,	54,192,	45,321,	29,190,	29,642,
Add for UNENUMERATED IMPORTS (say)		5,000,	4,500,	5,665,	7,297,	7,410,
TOTAL IMPORTS .....		55,017,	58,692,	50,986,	36,487,	37,052,

\* "Silk," inclusive of manufactured silk, "not made up."

**EXPORTS.—(United Kingdom.)—First Three Months (January—March), 1873-72-71-70-69.**—Declared Real Value, at Port of Shipment, of Articles of BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.

(First Three Months.) BRITISH PRODUCE, &c., EXPORTED.	[000's omitted.]	1873.	1872.	1871.	1870.	1869.
<b>MANFRS.—Textile.</b> Cotton Manufactures..		£	£	£	£	£
,, Yarn .....	10,382,	15,382,	18,066,	13,458,	12,339,	
Woollen Manufactures	2,696,	4,069,	3,165,	3,585,	3,382,	
,, Yarn .....	8,196,	8,328,	5,757,	5,693,	5,406,	
Silk Manufactures.....	1,226,	1,870,	1,204,	1,316,	1,357,	
,, Yarn .....	510,	637,	517,	605,	287,	
Linen Manufactures ...	442,	265,	320,	56,	47,	
,, Yarn .....	2,127,	2,219,	1,689,	1,855,	1,810,	
	520,	558,	504,	622,	601,	
	26,099,	33,328,	26,222,	27,190,	25,229,	
<b>„ Sewed.</b> Apparel .....	766,	694,	622,	419,	685,	
Haberdy. and Mllnry.	1,637,	1,589,	1,340,	1,146,	1,093,	
	2,403,	2,283,	1,962,	1,565,	1,578,	
<b>METALS, &amp;c.</b> ..... Hardware .....	1,167,	1,046,	715,	1,023,	903,	
Machinery .....	2,061,	1,571,	849,	1,050,	887,	
Iron .....	8,376,	6,251,	4,298,	4,240,	3,596,	
Copper and Brass.....	941,	669,	568,	855,	676,	
Lead and Tin .....	262,	418,	291,	986,	1,078,	
Coals and Culm .....	2,741,	1,644,	1,106,	1,147,	1,053,	
	15,548,	11,599,	7,827,	9,301,	8,193,	
<b>Ceramic Manufcts.</b> Earthenware and Glass	819,	640,	489,	597,	623,	
<b>Indigenous Mnfrs. and Products.</b> Beer and Ale.....	674,	648,	522,	575,	532,	
Butter .....	52,	74,	62,	57,	66,	
Cheese .....	20,	20,	32,	27,	21,	
Candles .....	49,	60,	41,	27,	34,	
Salt.....	152,	80,	105,	61,	81,	
Spirits .....	59,	51,	51,	44,	47,	
Soda .....	—	467,	305,	295,	308,	
	1,006,	1,400,	1,118,	1,086,	1,089,	
<b>Various Manufcts.</b> Books, Printed .....	183,	165,	134,	134,	144,	
Furniture .....	—	—	—	47,	45,	
Leather Manufactures	171,	930,	1,126,	612,	605,	
Soap .....	59,	72,	46,	53,	50,	
Plate and Watches ...	47,	40,	36,	101,	106,	
Stationery .....	152,	126,	96,	117,	95,	
	612,	1,333,	1,438,	1,064,	1,045,	
<b>Remainder of Enumerated Articles</b> .....	12,089,	3,579,	4,120,	2,525,	2,830,	
<b>Unenumerated Articles</b> .....	3,800,	3,013,	3,255,	2,350,	2,216,	
<b>TOTAL EXPORTS</b> .....	62,376,	57,175,	46,431,	45,678,	42,803,	

**SHIPPING.—(United Kingdom.)—Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the Three Months ended March, 1873-72-71.**

Countries from whence Entered and to which Cleared.	Total British and Foreign.					
	1873.		1872.		1871.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
<b>FOREIGN COUNTRIES.</b>						
Russia { Northern ports .....	24,135	19,703	33,885	12,277	17,084	15,677
Southern ,,, .....	132,732	44,345	219,632	59,473	175,951	66,851
Sweden .....	107,107	73,529	87,923	62,902	32,472	24,692
Norway .....	213,995	42,323	193,744	36,079	85,245	22,310
Denmark .....	46,780	81,834	41,996	91,203	20,127	49,230
Germany .....	311,880	361,842	273,096	380,244	164,448	361,356
Holland .....	194,628	226,538	190,802	221,299	124,430	154,344
Belgium .....	222,650	243,343	198,538	186,141	152,759	184,843
France .....	459,531	612,386	402,806	683,022	246,884	595,123
Spain .....	206,568	157,562	175,083	164,677	158,590	126,048
Portugal .....	74,300	72,111	64,676	60,462	78,826	45,949
Italy .....	62,303	178,294	55,418	200,405	57,228	166,822
Austrian territories .....	4,918	31,399	12,579	57,002	21,964	35,533
Greece .....	13,739	16,338	30,146	15,475	15,461	14,509
Turkey (including Wallachia and Moldavia) .....	68,857	75,393	64,523	92,335	65,974	97,017
Egypt .....	139,639	147,592	153,333	111,631	102,355	118,029
United States of America .....	733,075	524,248	597,073	550,152	685,053	573,982
Mexico, Foreign West Indies, and Central America .....	38,973	120,822	43,808	120,529	21,422	109,711
Brazil .....	48,570	81,892	66,217	92,818	49,970	90,856
Peru .....	56,595	49,100	32,604	51,266	64,144	35,310
Chili .....	19,487	59,961	21,403	48,561	12,675	30,127
China .....	30,995	7,552	44,550	20,640	41,046	23,339
Other countries .....	107,791	138,295	126,739	147,039	88,348	118,978
<i>Total, Foreign Countries</i>	<i>3,319,248</i>	<i>3,366,402</i>	<i>3,130,574</i>	<i>3,465,632</i>	<i>2,482,456</i>	<i>3,060,636</i>
<b>BRITISH POSSESSIONS.</b>						
North American Colonies .....	40,752	67,023	30,275	111,825	51,795	94,329
East Indies, including } Ceylon, Singapore, and Mauritius .....	198,607	237,587	243,843	301,424	169,426	259,180
Australia and New Zealand .....	44,237	100,735	55,548	77,571	52,075	59,229
West Indies .....	19,954	46,091	20,774	57,447	30,428	55,773
Channel Islands .....	51,059	37,317	53,423	42,615	51,546	39,467
Other possessions .....	54,679	202,181	53,367	222,169	41,272	162,130
<i>Total, British Possessions</i>	<i>409,288</i>	<i>690,934</i>	<i>457,230</i>	<i>813,051</i>	<i>396,542</i>	<i>670,108</i>
<b>TOTAL FOREIGN COUNTRIES AND BRITISH POSSESSIONS.</b>						
Three months ended March { 1873.....	3,728,536	4,057,336	—	—	—	—
'72.....	—	—	3,587,804	4,278,683	—	—
'71.....	—	—	—	—	2,878,998	3,730,744

**GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—Computed Real Value for the Three Months (January—March), 1873-72-71.**

[000's omitted.]

(First Three Months.)	1873.		1872.		1871.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
<b>Imported from:—</b>						
Australia .....	1,813,	4,	1,767,	7,	2,249,	4,
So. America and W. Indies .....	234,	644,	216,	579,	332,	744,
United States and Cal. ....	1,435,	1,482,	107,	696,	791,	1,822,
	3,482,	2,130,	2,090,	1,282,	3,372,	2,570,
France.....	108,	535,	77,	194,	8,	6,
Germany, Holl. & Belg. ....	9,	6,	30,	1,727,	446,	126,
Prtgl., Spain, and Gbrltr.....	20,	19,	12,	10,	16,	10,
Malta., Trky., and Egypt .....	40,	2,	29,	10,	52,	19,
China .....	1,	85,	—	—	—	1,190,
West Coast of Africa	15,	—	18,	—	32,	—
All other Countries....	19,	70,	18,	18,	172,	948,
<i>Totals Imported....</i>	<i>3,694,</i>	<i>2,847,</i>	<i>2,274,</i>	<i>3,241,</i>	<i>4,098,</i>	<i>4,869,</i>
<b>Exported to:—</b>						
France.....	363,	567,	120,	55,	98,	52,
Germany, Holl. & Belg. ....	2,034,	634,	322,	106,	1,999,	1,608,
Prtgl., Spain, and Gbrltr.....	2,593,	119,	949,	141,	42,	82,
	4,990,	1,320,	1,391,	302,	2,139,	1,742,
Ind. and China (via Egypt).....	772,	590,	600,	3,332,	354,	176,
Danish West Indies	—	—	—	—	—	—
United States .....	—	—	—	—	—	1,
South Africa .....	136,	23,	744,	54,	45,	—
Mauritius .....	—	—	—	—	—	—
Brazil .....	25,	—	217,	—	54,	—
All other Countries....	534,	632,	1,896,	564,	59,	168,
<i>Totals Exported....</i>	<i>6,457,</i>	<i>2,565,</i>	<i>4,848,</i>	<i>4,252,</i>	<i>2,651,</i>	<i>2,087,</i>
<i>Excess of Imports....</i>	<i>—</i>	<i>282,</i>	<i>—</i>	<i>—</i>	<i>1,444,</i>	<i>2,781,</i>
,, Exports ....	2,763,	—	2,574,	1,011,	—	—

## REVENUE.—(UNITED KINGDOM.)—31ST MARCH, 1873-72-71-70.

Net Produce in QUARTERS and YEARS ended 31st MARCH, 1873-72-71-70.

[000's omitted.]

QUARTERS, ended 31st March.	1873.	1872.	1873.		Corresponding Quarters.	
			Less.	More.	1871.	1870.
Customs .....	£ 5,299,	£ 5,017,	—	282,	£ 4,927,	£ 4,941,
Excise .....	7,914,	7,453,	—	461,	7,365,	7,014,
Stamps .....	2,615,	2,540,	—	75,	2,412,	2,425,
Taxes .....	1,881,	1,903,	22,	—	1,911,	2,157,
Post Office .....	1,240,	1,280,	40,	—	1,290,	1,170,
Telegraph Service ....	280,	170,	—	110,	100,	100,
	19,229,	18,363,	62,	928,	18,005,	17,807,
Property Tax .....	4,934,	7,070,	2,136,	—	4,674,	5,784,
	24,163,	25,433,	2,198,	928,	22,679,	23,591,
Crown Lands .....	110,	110,	—	—	120,	114,
Miscellaneous.....	651,	461,	—	189,	706,	1,124,
<i>Totals</i> .....	24,924,	26,004,	2,198,	1,117,	23,505,	24,829,
				NET DECR. £1,081,		

YEARS, ended 31st March.	1873.	1872.	1873.		Corresponding Years.	
			Less.	More.	1871.	1870.
Customs .....	£ 21,033,	£ 20,326,	—	707,	£ 20,191,	£ 21,529,
Excise .....	25,785,	23,326,	—	2,459,	22,788,	21,763,
Stamps .....	9,947,	9,772,	—	175,	9,007,	9,248,
Taxes .....	2,337,	2,330,	—	7,	2,725,	4,500,
Post Office .....	4,820,	4,680,	—	140,	4,770,	4,670,
Telegraph Service ....	1,015,	755,	—	260,	500,	100,
	64,937,	61,189,	—	3,748,	59,981,	61,810,
Property Tax .....	7,500,	9,084,	1,584,	—	6,350,	10,044,
	72,437,	70,273,	1,584,	3,748,	66,331,	71,854,
Crown Lands .....	375,	375,	—	—	385,	375,
Miscellaneous.....	3,796,	4,060,	263,	—	3,229,	3,205,
<i>Totals</i> .....	76,608,	74,708,	1,847,	3,748,	69,945,	75,434,
				NET INCR. £1,901,		

## REVENUE.—UNITED KINGDOM.—QUARTER ENDED 31ST MARCH, 1873:—

*An Account showing the REVENUE and other RECEIPTS in the QUARTER ended 31st March, 1873; the ISSUES out of the same, and the Charges on the Consolidated Fund at that Date, and the Surplus or Deficiency of the Balance in the Exchequer on the 31st of March, 1873, in respect of such Charges.*

## Received:—

	£
Income received, as shown in Account I .....	24,924,084
Amount raised on Account of Fortifications, per Act 32 and 33 Vict., } cap. 76.....}.....	250,000
Ditto, Military Barracks, per Act 35 and 36 Vict., cap. 68 .....	58,000
Amount received in Repayment of Advances for Public Works, &c. ...	691,041
,,                for Greenwich Hospital .....	48,872
Total .....	<u>£25,971,997</u>

## Paid:—

	£
Net deficiency of the balance in the Exchequer to meet the charge } on the 31st of December, 1872, as per last account .....	2,359,690
Amount applied out of the Income to Supply Services .....	10,716,004
,,                advanced for Greenwich Hospital .....	48,872

Charge of the *Consolidated Fund* on the 31st of March, 1873, viz.:—

Interest of the Permanent Debt .....	£5,038,721
Terminable Annuities .....	1,501,477
Principal of Exchequer Bills .....	21,000
Interest of         ,,         .....	23,301
The Civil List .....	101,496
Other Charges on Consolidated Fund .....	579,533
Advances for Public Works, &c. .....	382,532
Sinking Fund .....	1,623,970
	9,272,030

Surplus balance in the Exchequer on the 31st of March, 1873, beyond the amount of the charge on the Consolidated Fund on that date, payable in June quarter, 1873 .....	*3,575,401
Total .....	25,971,997

\* Charge on 31st of March, 1873 (as above) ..... £9,272,030

Paid out of growing produce in March Quarter, 1873 ..... 854,726

Portion of the Charge payable in June Quarter, 1873 ..... 8,417,304

To meet which there was in the Exchequer on the 31st of }  
March, 1873 ..... } 11,992,705

Surplus balance as above:—

Great Britain .....	£2,330,582
Ireland .....	1,244,819
	3,575,401

**BRITISH CORN.—Gazette Average Prices (ENGLAND AND WALES),  
First Quarter of 1873.**

[This Table is communicated by the Statistical and Commercial Department, Board of Trade.]

Weeks ended on Saturday.	Weekly Average. (Per Impl. Quarter.)					
	Wheat.		Barley.		Oats.	
1873.	s.	d.	s.	d.	s.	d.
January 4 .....	55	11	39	9	21	11
„ 11 .....	55	10	39	11	22	-
„ 18 .....	55	9	40	5	22	8
„ 25 .....	55	9	40	3	22	1
<i>Average for January</i> .....	55	10	40	2	22	2
February 1 .....	56	8	40	3	22	-
„ 8 .....	56	2	40	2	21	7
„ 15 .....	56	8	40	6	22	8
„ 22 .....	56	1	40	6	21	7
<i>Average for February</i> .....	56	6	40	4	22	2
March 1 .....	56	2	40	5	22	8
„ 8 .....	55	5	40	4	22	4
„ 15 .....	55	4	39	9	23	8
„ 22 .....	55	3	39	11	23	6
„ 29 .....	55	4	39	-	24	-
<i>Average for March</i> .....	55	5	40	1	23	3
<i>Average for the quarter</i> .....	55	10	40	1	22	6

## BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the FIRST QUARTER (Jan.—March) of 1873.

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES. (Wednesdays.)	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
£ Mlns.	1873.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1872. Per cent.
38,37	Jan. 1 ....	11,01	3,98	23,37	25,56	11 Dec. 5
38,41	" 8 ....	11,01	3,98	23,41	26,02	1873.
38,60	" 15 ....	11,01	3,98	23,60	26,54	15 Jan. 4½
38,87	" 22 ....	11,01	3,98	23,87	25,15	22 " 4
39,03	" 29 ....	11,01	3,98	24,03	24,85	29 " 3½
39,43	Feb. 5 ....	11,01	3,98	24,43	25,29	
39,10	" 12 ....	11,01	3,98	24,10	24,88	
39,30	" 19 ....	11,01	3,98	24,30	24,83	
39,30	" 26 ....	11,01	3,98	24,30	24,53	
38,98	Mar. 5 ....	11,01	3,98	23,98	25,25	
38,77	" 12 ....	11,01	3,98	23,77	24,75	
38,80	" 19 ....	11,01	3,98	23,80	24,62	
37,87	" 26 ....	11,01	3,98	22,87	25,19	26 Mar. 4

## BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES.	Assets.			Totals of Liabili- ties and Assets.	
Capital.	Rest.	Deposits.	Seven Day and other Bills.			Securities.	Reserve.			
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1873.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,27	11,03	21,48	,34	Jan. 1	13,27	23,97	12,81	,64	50,70
14,55	3,41	6,77	19,60	,37	" 8	13,27	18,42	12,39	,64	44,73
14,55	3,45	7,23	20,31	,42	" 15	13,27	18,98	12,06	,66	45,99
14,55	3,46	8,28	18,57	,34	" 22	13,27	17,39	13,72	,82	45,22
14,55	3,47	10,31	17,51	,34	" 29	13,27	17,81	14,18	,94	46,21
14,55	3,50	11,77	17,47	,37	Feb. 5	13,28	19,32	14,14	,92	47,68
14,55	3,52	13,07	19,59	,39	" 12	13,28	22,73	14,22	,89	51,15
14,55	3,51	13,67	18,94	,34	" 19	13,38	22,20	14,47	,97	51,04
14,55	3,52	14,64	17,97	,33	" 26	13,38	21,96	14,77	,91	51,04
14,55	3,70	15,31	18,16	,35	Mar. 5	13,39	23,90	13,73	1,05	52,09
14,55	3,71	15,91	18,21	,38	" 12	13,36	24,39	14,02	1,00	52,79
14,55	3,76	16,33	18,68	,39	" 19	13,36	25,15	14,18	1,03	53,74
14,55	3,78	16,72	18,75	,34	" 26	13,36	27,10	12,68	1,00	54,17

**LONDON CLEARING; CIRCULATION, PRIVATE AND PROVINCIAL.**

*The London Clearing, and the Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday in each Week during the FIRST QUARTER (January—March) of 1873; and in SCOTLAND and IRELAND, at the Three Dates, as under.*

[0,000's omitted.]

ENGLAND AND WALES.					SCOTLAND.				IRELAND.		
DATES. Saturday.	London : Cleared in each Week ended Wednesday.*	Private Banks. (Fixed Issues, 3,93).	Joint Stock Banks. (Fixed Issues, 2,74).	TOTAL. (Fixed Issues, 6,67).	Weeks ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL (Fixed Issues, 6,35).
1873.		£	£	£	1873.	£	£	£	£	£	£
Jan. 4	130,06	2,68	2,38	5,06							
„ 11	114,04	2,75	2,47	5,22							
„ 18	145,04	2,76	2,46	5,22							
„ 25	112,88	2,74	2,41	5,15	Jan. 25	1,77	3,54	5,31	3,91	3,46	7,37
Feb. 1	103,83	2,71	2,39	5,10							
„ 8	149,24	2,66	2,39	5,05							
„ 15	103,69	2,62	2,38	5,00	Feb. 22	1,73	3,46	5,19	3,87	3,37	7,24
„ 22	143,20	2,56	2,37	4,93							
Mar. 1	100,20	2,54	2,37	4,91							
„ 8	161,77	2,57	2,40	4,97							
„ 15	96,33	2,56	2,40	4,96	Mar. 22	1,71	3,45	5,16	3,89	3,27	7,16
„ 22	134,17	2,56	2,41	4,97							
„ 29	96,75	2,62	2,46	5,08							

\* The Wednesdays preceding the Saturdays.

**FOREIGN EXCHANGES.—Quotations as under, LONDON on Paris, Hamburg and Calcutta;—and New York, Calcutta, Hong Kong and Sydney, on LONDON.**

1  DATES.	2  London on Paris.	3  London on Hamburg.	4  New York.	5 6 Calcutta.		7  Hong Kong.	8  Sydney.	9  Standard Silver in bars in London
				India Council.	At Calcutta on London.			
				60 d. s.	6 m. d.			
1873.				per. cent.	d.	d.	per cent.	d.
Jan. 4 .....	25·90	20·48	109 $\frac{3}{8}$	22 $\frac{3}{4}$	23 $\frac{3}{8}$	53 $\frac{1}{4}$	—	59 $\frac{3}{4}$
„ 18 .....	"	20·50	" $\frac{3}{8}$	" $\frac{11}{16}$	" $\frac{5}{16}$	—	—	, $\frac{7}{8}$
Feb. 1 .....	25·87 $\frac{1}{2}$	20·51	109 $\frac{3}{8}$	22 $\frac{1}{16}$	23 $\frac{5}{16}$	—	—	59 $\frac{15}{16}$
„ 15 .....	"	20·55	" $\frac{1}{4}$	" $\frac{3}{4}$	—	53 $\frac{1}{8}$	—	, $\frac{7}{8}$
Mar. 1 .....	25·77 $\frac{1}{2}$	20·52	108 $\frac{1}{2}$	22 $\frac{1}{16}$	23 $\frac{5}{16}$	53 $\frac{1}{8}$	—	59 $\frac{15}{16}$
„ 15 .....	25·85	20·53	108	" $\frac{3}{4}$	" $\frac{1}{4}$	„	—	, $\frac{3}{4}$

## JOURNAL OF THE STATISTICAL SOCIETY,

SEPTEMBER, 1873.

*REPORT of the COUNCIL for the FINANCIAL YEAR ended 31st December, 1872, and for the SESSIONAL YEAR ended with June, 1873, presented at the THIRTY-NINTH ANNIVERSARY MEETING of the STATISTICAL SOCIETY, held at the Society's Rooms, 12, St. James's Square, on 30th June, 1873; with the PROCEEDINGS of that Meeting.*

DR. WILLIAM FARR, F.R.S., *President, in the Chair.*

DURING the time which has elapsed since the Council had the pleasure of meeting the Fellows of the Society at their thirty-eighth anniversary, successful efforts have been made to increase the Fellowship of the Society.

Early in the present year a circular was addressed to each Fellow, of which the subjoined is a copy:—

STATISTICAL SOCIETY,  
12, ST. JAMES'S SQUARE, S.W.,  
30th January, 1873.

Sir,

We are directed by the President and Council of the Statistical Society to bring the following circumstances to your notice, and to solicit your active co-operation in placing the Society upon a more extensive basis whence its usefulness and influence may be increased.

- I. The Society is constituted of Fellows and of Honorary and Corresponding Members, forming together a body which, at the present time, numbers upwards of *five hundred and twenty* Members. The "Fellows," who amount to *four hundred and sixty*, are, for the most part, resident in the Metropolis, or other parts of the United Kingdom. The principal States of Europe and America are represented by the "Foreign Honorary Members;" British India and the Crown Colonies by the "Corresponding Members." The organisation of the Society has from its inception been purposely cosmopolitan.
- II. The Society possesses a Library and Reading Room; its ordinary meetings are held monthly from November to June; it publishes a Quarterly *Journal*, in which the Papers read before the Fellows are printed *in extenso*.
- III. Occasionally the Society has originated and statistically conducted inquiries upon special subjects of economic or social interest. The most recent work of the kind relates to the complicated question of Local Taxation in England. The instructive Essays (*Tayler Prize Essays*) by

Mr. R. H. Inglis Palgrave and Mr. Scott on that topic will be found in the Society's *Journal* for 1871.

- IV. It is thought that the present is a favourable moment for reconsidering the scientific work of the Society, so far as it depends upon the frequency and scope of its ordinary Meetings ; and the extent and character of its Library and published Transactions.
- V. At the recent International Statistical Congress in St. Petersburg, a permanent commission was appointed to watch over the progress of Statistical research ; so that the results of the deliberations which take place at those gatherings may, in their international aspects, be as far as possible utilised during the interval of consecutive meetings. To that important work the President and Council believe the Fellows and Members of this Society can afford material aid.
- VI. That the Society may, with any hope of success, be able to extend its sphere of useful activity, and accomplish the various ends we have indicated, will necessitate a considerable increase of Fellowship and Revenue.
- VII. The proposal for combining the resources of several of the learned Associations of London to obtain house accommodation under one roof and which, as you are aware, originated with the Statistical Society, is, at length, on the point of realisation. The Council anticipate that the time is not distant when a Central Building, sufficiently extensive and convenient for all the wants of the scientific bodies confederated for the purpose of a joint domicile, will be opened. The essential requisites of a structure with that design have been steadily kept in view by the promoters of the scheme. A Theatre in common for Lectures and ordinary Meetings ; Galleries for the exposition of Scientific objects ; ample wall space for Libraries, and separate Offices and Committee Rooms for the various Societies, are among the principal features of this needful undertaking.
- VIII. Though several learned Societies in the Metropolis charge a higher subscription than the Statistical Society, they require, in addition, the payment of an *Entrance Fee*. In this Society the Annual Subscription is 2*l.* 2*s.*, but no entrance fee is at present exacted. The Fellows, moreover, have the privilege of compounding, when joining the Society, or at any other time, for all future subscriptions upon the payment of *Twenty Guineas*.
- IX. The most eligible candidates will be found among those who take an interest in public, local, or international affairs, or who desire by other means to advance studies most directly useful to mankind. By the zealous personal aid and influence of the Members of the Society, the President and Council trust that large accessions may be made to the present list of its Fellows.

To promote this practical object, two Nomination Papers are enclosed for your immediate use.

We have the honour to be, Sir,

Your obedient Servants,

FREDERICK PURDY,

JACOB WALEY, M.A.,

FREDERIC J. MOUAT, M.D.,

*Honorary Secretaries.*

Subsequently a similar letter, generally setting forth the objects, past proceedings, and future capabilities of our body, was addressed to those Peers, Members of Parliament, and other gentlemen likely to be interested in Statistical research, whose names were not to be found on the register of the Society.

It has resulted, chiefly from these communications, as the

Council believe, that the unusually large number of seventy-two Fellows have been admitted during the half-year just ended.

The extent of the Fellowship is compared in the following table with the numbers respectively at the close of 1872, 1871, 1870, and 1869:—

Particulars.	1872.	1871.	1870.	1869.
Number of Fellows on 31st December ....	454	431	403	400
Life Members included in above .....	72	63	62	62
Members lost during the year by death } or withdrawal .....	17	17	22	24
New Members elected .....	40	45	25	37

But on adding the Fellows who have been elected since the close of 1872, and making allowance for losses occasioned by deaths and resignations, your Council find that the total number which at the present moment form the Fellowship of the Society is *five hundred and eleven*.

The financial condition of the Society has improved with the extension of its Fellowship. The principal features in the accounts of the last three years are shown hereunder:—

Particulars.	1872.	1871.	1870.
	£	£	£
Balance at beginning of year .....	290	214	200
Receipts from all sources .....	1,112	880	852
Cash balance at end of year .....	411	290	214
Surplus of assets over liabilities .....	2,357	2,061	1,954

Besides the Opening Address by the President at the first ordinary meeting of the Session, the undesignated Fellows have read papers upon the respective subjects named in the account of the proceedings of the Society which is subsequently set out, viz.:—

Mr. Samuel Brown.

„ Ernest Seyd.

Dr. W. A. Guy.

Mr. R. H. Inglis Palgrave.

„ Richard Biddulph Martin, M.A.

„ Frank P. Fellows.

„ F. H. Janson.

„ G. Warde Norman.

The ordinary proceedings of the Society are detailed in the following list:—

SESSION 1872-73.

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*First Ordinary Meeting, Tuesday, 19th November.*

DR. FARR, F.R.S., President, in the Chair.

The following Fellows were elected, viz.:—

His Grace the Duke of Bedford.

Joseph Spriggs.	Egerton Hubbard.
J. Wilson Carillon.	James Aldridge.

The President read his “Opening Address,” and

Mr. Samuel Brown read a “Report on the International Statistical Congress of 1872.”

*Second Ordinary Meeting, Tuesday, 17th December.*

JAMES HEYWOOD, F.R.S., Vice-President, in the Chair.

The following were elected Fellows, viz.:—

Robert Michell.	Thomas E. Gibb.
R. G. Haliburton.	Octavius V. Morgan.
John P. Knight.	W. F. A. Archibald.
George Humphreys.	Joseph Rabino.

Frederick W. Brind.

The following Paper was read:—

“On the Bank of England Statistics.” By Mr. Ernest Seyd.

*Third Ordinary Meeting, Tuesday, 21st January.*

DR. FARR, F.R.S., President, in the Chair.

The following were elected Fellows, viz.:—

John Bellows.	Richard C. Fisher.
Robert Lawson.	George Bate.

H. Reader Lack.

The following Papers were read:—

“On John Howard as Statist.” By Dr. Guy, F.R.S., and

“On the Relative Supplies of Town and Country Families to  
“the Population of Future Generations.” By Francis Galton,  
F.R.S.

*Fourth Ordinary Meeting, Tuesday, 18th February.*

DR. FARR, F.R.S., President, in the Chair.

The following were elected Fellows, viz.:—

Richard Seyd.	Edward McDermott.
Lewis Emanuel.	Sir Edward Watkin.
Arthur G. Browning.	Robert G. Underdown.

The following Paper was read:—

“On Bill Circulation, with some Banking Statistics.” By Mr. R. H. Inglis Palgrave.

*Fifth Ordinary Meeting, Tuesday, 18th March.*

DR. FARR, F.R.S., President, in the Chair.

The following were elected Fellows, viz.:—

Stewart Hewlings.  
William H. Millar.  
Alfred Venables.  
Whitbread Tomson.  
Henry Fisher.  
Dr. Edward Smith.  
James H. Webster.  
William P. Bain.

Edward T. Gorely.  
Jeffery Whitbread.  
The Rev. Canon Cromwell.  
Alfred H. Baynes.  
Henry Martin.  
Duncan J. Kay.  
John Green Elsey.  
D. Lancaster.

The following Paper was read:—

“On the Purchase of Railways by the State.” By Mr. R. Biddulph Martin, M.A.

The discussion on Mr. Martin’s paper was continued at the Adjourned Meetings, held on the 25th March and the 1st April.

*Sixth Ordinary Meeting, Tuesday, 15th April.*

DR. FARR, F.R.S., President, in the Chair.

The following were elected Fellows, viz.:—

John James Gutch.	Samuel Kemp.
Captain H. W. L. Hime, R.A.	W. L. Snudden.
Jacob A. Franklin.	

The following Paper was read:—

“On a National Domesday Book.” By Mr. Frank P. Fellows.

*Seventh Ordinary Meeting, Tuesday, 20th May.*

DR. FARR, F.R.S., President, in the Chair.

The following were elected Fellows, viz.:—

Right Hon. the Earl of Airlie, K.T.	
Colonel Hogg, M.P.	George Dixon, M.P.
L. McEwen.	William Pickstone.
Thomas Brassey, M.P.	P. A. Taylor, M.P.
Charles Waring.	Rev. G. R. Badenoch.
W. B. Beaumont, M.P.	T. M. Weguelin, M.P.
H. M. Hyndman.	Captain D. Galton, C.B., F.R.S.
Thomas Lea, M.P.	Sir H. G. D. Croft, Bart., M.P.
Thomas Briggs.	William McArthur, M.P.
J. Berger Spence.	George King.

The following Paper was read :—

“ On the Statistics of Legislation.” By Mr. F. H. Janson, F.L.S., Vice-President of the Incorporated Law Society.

*Eighth Ordinary Meeting, Tuesday, 17th June.*

DR. GUY, Vice-President, in the Chair.

The following were elected Fellows, viz.:—

Right Hon. Lord Sherborne.	Caeser Czarnikow.
J. Delahunty, M.P.	Henry Woods, M.P.
Most Hon. the Marquis of Ripon.	James Lawrie, F.R.G.S.
John S. R. Phillips.	Most Hon. the Marquis of Tweeddale, K.T.
Most Hon. the Marquis of Salisbury.	Benjamin Haughton, C.E.
William Macandrew, J.P.	His Grace the Duke of Wellington, K.G.
Hon. Henry F. Cowper, M.P.	Edward R. Divett.
A. MacArthur.	Alexander Brogden, M.P.
Lord George Hamilton, M.P.	George Artingstall, F.R.G.S.
James Bogie.	Samuel Morley, M.P.
Robert William Hanbury, M.P.	

The following paper was read :—

“ An Attempt to Answer the Question, Why it is that so much  
“ Land is Occupied and Cultivated by its Owners in France, and  
“ some other European Countries on the Continent, and so Little in  
“ England ?” By Mr. George Warde Norman.

The large audiences which during the past Session the reading of papers and the discussions thereon have secured, is the best testimony to the sustained interest felt by the public, as well as by our Fellows in a scientific method of research applicable to most spheres of human knowledge. So great, indeed, was the interest which Mr. R. B. Martin’s paper on Railways and their Purchase by the State called forth, that it was found necessary to adjourn the meeting twice, to give the various speakers a sufficient opportunity of placing their opinions before the Society.

The courtesy and hospitality with which the delegates sent by the various Governments to the International Statistical Congress which assembled in St. Petersburg last year, and the munificent reception given to the whole body by the Emperor, and, on his behalf, by the Grand Duke Constantine, have been dwelt upon by Mr. Samuel Brown, who has reported to the Society in considerable detail the transactions of the Congress of 1872.

A copy of the volume of our *Journal* containing that report, together with an album of photographic portraits of the English delegates was transmitted by the President of the Society to His

Imperial Highness, from whom an acknowledgment in these terms has been received :—

“ St. Petersburg, 27th March  
8th April, 1873.

“ My Dear Mr. Farr,

“ It is with great pleasure that I received the volume of the *Journal* of the Statistical Society of London, and the album containing the photographs of the English delegates, among whom you occupy so eminent a position, and whose presence at our Congress was so highly appreciated.

“ Pray transmit to the Statistical Society my best thanks for their kind attention, and assure them of my high esteem and sincere sympathy for their always useful, and often remarkable, labours.

“ Believe me, my dear Mr. Farr,

“ Your sincere wellwisher,

(Signed) “ CONSTANTINE.”

The meeting is aware of the solicitude with which the Council have for some time sought, with the co-operation of several other learned societies, the advantages to be secured by a joint house accommodation. In the circular letter of the 30th January last, the Council informed you that a project for this purpose was then “on the point of realisation ;” it is, therefore, with deep regret that they now have to report that the scheme which then appeared so promising, has since, from a variety of causes, been for the present postponed.

To secure some objects not provided for in the original rules, as well as to make certain adjustments demanded by the present circumstances of the Society, the Council have thought it desirable to recommend to you certain specific changes in the existing code. A printed copy of the proposed alterations has been duly sent to each Fellow, and it is an important duty imposed on the present meeting to discuss the changes approved by the Council, to modify, to reject, or adopt any, or all of them, which the meeting may consider expedient.

A ballot for Council and Officers for the ensuing Session was taken at the meeting, in conformity with the rules, when the Scrutineers declared the undernamed Fellows had been duly elected to the offices respectively designated :—

## COUNCIL AND OFFICERS FOR 1873-74.

## PRESIDENT.

WILLIAM AUGUSTUS GUY, M.B., F.R.S.

## TRUSTEES.

James Heywood, M.A., F.R.S.	Sir John Lubbock, Bart., M.P., F.R.S.
William Newmarch, F.R.S.	

## COUNCIL.

Sir James Anderson.	F. H. Janson.
Thomas Graham Balfour, M.D., F.R.S.	Henry Jeula.
Henry G. Bohn.	Francis Jourdan.
Samuel Brown.	Professor Leone Levi.
Edwin Chadwick, C.B.	William Golden Lumley, Q.C., LL.M.
Hammond Chubb, B.A.	R. Biddulph Martin, M.A.
Hyde Clarke, D.C.L.	Frederic John Mouat, M.D.
Leonard Henry Courtney.	R. H. Patterson.
Francis Galton, F.R.S.	Frederick Purdy.
Robert Giffen.	Robert Rawlinson, C.B.
Archibald Hamilton.	Ernest Seyd.
James Thomas Hammick.	Thomas Sopwith, M.A., F.R.S.
Frederick Hendriks.	The Right Hon. The Earl Stanhope, F.R.S.
James Heywood, M.A., F.R.S.	William Tayler.
Henry Hoare.	Richard Valpy.

## TREASURER.

James Thomas Hammick.

## HONORARY SECRETARIES.

Frederick Purdy.		Frederic J. Mouat, M.D.
Robert Giffen.		

The following balance sheets were laid before the meeting :—

## (I.)—BALANCE SHEET of RECEIPTS and PAYMENTS, YEAR ended 31st DECEMBER, 1872.

RECEIPTS.		£ s. d.	PAYMENTS.		£ s. d.
Balance in Bank,			Rent .....		100 - -
31st December, 1871 .....	£279 2 7		Salaries .....		192 1 -
Balance of Petty Cash .....	4 7 -		Journal, Printing .....	£313 2 9	
Balance of Advertisement Cash ...	6 14 9		,, Index .....	5 5 -	
	290 4 4				318 7 9
Dividends on Consols .....	35 5 -		Advertising .....	23 1 10	
Subscriptions, viz.:—			Ordinary Meeting Expenses .....	24 19 6	
26 Arrears .....	£54 12 -		Library .....	5 6 11	
318 for 1872 .....	667 16 3		Miscellaneous Printing and Stationery .....	33 1 -	
8 „ '73 .....	16 16 -		Postage and Receipt Stamps .....	28 13 -	
	739 4 3		Fire and Light .....	14 8 -	
Compositions .....	189 - -		Incidental Expenses .....	40 12 10	
Journal Sales .....	£140 9 11		Annual Dinner .....	25 - 6	
„ Advertisements .....	7 17 6		Purchase of £200 3 per Cent. Consols (cost) .....	185 10 -	
	148 7 5		Balance at Messrs. Drummond's .....	£407 5 9	
	£1,402 1 -		Balance of Advertisement Cash ...	3 12 11	
				410 18 8	
				£1,402 1 -	

## (II.)—BALANCE SHEET of ASSETS and LIABILITIES on 31st DECEMBER, 1872.

LIABILITIES.		£ s. d.	ASSETS.		£ s. d.
December Journal, 1871 .....	90 - -		Cash Balance .....		410 18 8
Printing (say) .....			Stock:—		
			New 3 per Cent. Consols .....	£1,021 12 1	
December Journal, 1872 .....	5 5 -		(£1,071 4s. 8d.)		
Index to .....	—	95 5 -	3 per Cent. Consols .....	300 - -	
Miscellaneous (say) .....	40 - -		(£328 15s. 4d.)		
Balance in favour of Society .....	2,357 5 9				1,321 12 1
			Property (Estimated Value):—		
			Books in Library .....	£400	
			Journals in Stock .....	200	
			Furniture .....	100	
				—	700 - -
			Arrears recoverable (say) .....	60 - -	
					£2,492 10 9

*“Auditors’ Report 1872.**“ STATISTICAL SOCIETY,**“ 12, ST. JAMES’S SQUARE, LONDON, S.W.,**“ 12th February, 1873.**“ The Auditors appointed to examine the Accounts of the Society herewith**“ REPORT :—*

*“ That they have carefully compared the Entries in the Books with the several Vouchers for the same, from 1st January to 31st December, 1872, and find them correct, showing the Receipts (including a Balance of 290*l.* 4*s.* 4*d.* from 1871) to have been 1,402*l.* 1*s.* —*d.*, and the Payments 991*l.* 2*s.* 4*d.*, leaving a Balance in favour of the Society of 410*l.* 18*s.* 8*d.**

*“ They have also had laid before them an estimate of the Assets and Liabilities of the Society, the former amounting to 2,492*l.* 10*s.* 9*d.*, and the latter to 135*l.* 5*s.* —*d.*,—leaving a Balance in favour of the Society of 2,357*l.* 5*s.* 9*d.**

*“ They further find that at the end of the year 1871 the number of Fellows on the list was 431, which number was diminished in the course of the year to the extent of 17 by Deaths, Resignations, and other causes; and that 40 new Members were elected; leaving on the list, on 31st December, 1872, 454 Fellows of the Society.*

(Signed)

“ WILLIAM TAYLER,  
“ J. O. CHADWICK,  
“ EBENEZER CLARKE,

} *Auditors.”*

Due notice having been given to the Fellows of the Society, the Rules were revised and passed by the Meeting as hereunder set out:—

## RULES OF THE STATISTICAL SOCIETY.

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### *Objects of the Society.*

1. THE Statistical Society was established to collect, arrange, digest, and publish facts illustrating the condition and prospects of society, in its material, social and moral relations. These facts are for the most part arranged in tabular forms, and in accordance with the principles of the numerical method.

The Society not only collects new materials, but condenses, arranges, and publishes those already existing, whether unpublished or published in diffuse and expensive forms, in the English or in any foreign language.

The Society likewise promotes the discussion of legislative and other public measures from the statistical point of view. These discussions form portions of the Transactions of the Society.

### *Constitution of the Society.*

2. The Society consists of Fellows and Honorary Members, elected in the manner laid down in the following rules.

### *Number of Fellows and Honorary Members.*

3. The number of Fellows shall be unlimited. Foreigners or British subjects of distinction residing abroad may be admitted as Honorary Members: of whom the number shall not be more than seventy at any one time.

### *Proposal of Fellows.*

4. Every Candidate for admission as a Fellow of the Society, shall be proposed by two or more Fellows, who, shall certify from their personal knowledge of him or of his works, that he is a fit person to be admitted a Fellow of the Statistical Society. Every such certificate having been read and approved at a Meeting of the Council, shall be suspended in the meeting-room of the Society until the following Ordinary

Meeting, at which the vote shall be taken upon it.

### *Election of Fellows.*

5. In the election of Fellows, the votes shall be taken by ballot. No person shall be admitted unless at least sixteen Fellows vote, and unless he have in his favour three-fourths of the Fellows voting.

### *Admission of Fellows.*

6. Every Fellow elect shall appear for his admission on or before the third Ordinary Meeting of the Society after his election, or within such time as shall be granted by the Council.

The manner of admission shall be thus:—

Immediately after the reading of the minutes, the Fellow elect, having first paid his subscription for the current year or his composition, shall sign the obligation contained in the Fellowship-book, to the effect following:—

“ We, who have underwritten our names, do hereby undertake, each for himself, that we will endeavour to further the good of the Statistical Society for improving Statistical Knowledge, and the ends for which the same has been founded; that we will be present at the Meetings of the Society as often as conveniently we can, and that we will keep and fulfil the Rules and Orders of this Society: provided that whenever any one of us shall make known, by writing under his hand, to the President for the time being, that he desires to withdraw from the Society, he shall be free thenceforward from this obligation.”

Whereon the President, taking him by the hand, shall say,—“ By the authority and in the name of the Statistical Society I do admit you a Fellow thereof.”

Upon their admission Fellows shall have the right of attaching to their names the letters F.S.S.

#### *Admission of Honorary Members.*

7. There shall be Two Meetings in the year, on such days as shall be hereafter fixed by the Council, at which *Honorary Members* may be elected. No Honorary Member can be recommended for election but by the Council. Any Member of the Council may propose a Foreigner or British subject of distinction residing abroad at any Meeting of the Council, delivering at the same time a written statement of the qualifications, offices held by, and published works of the person proposed; and ten days' notice at least shall be given to every Member of the Council, of the day on which the Council will vote by ballot on the question whether they will recommend the person proposed. No such recommendation to the Society shall be adopted unless at least three-fourths of the votes are in favour thereof. Notice of the recommendation shall be given from the chair at the Meeting of the Society next preceding that at which the vote shall be taken thereon. No person shall be elected an Honorary Member unless sixteen Fellows vote and three-fourths of the Fellows voting be in his favour.

The Council shall have power to elect as Honorary Members, the President for the time being of the Statistical Societies of Dublin, Manchester, and Paris, and the President of any other Statistical Society at home or abroad.

#### *Payments by Fellows.*

8. Every Fellow of the Society shall pay a yearly subscription of *Two Guineas*, or may at any time compound for his future yearly payments by paying at once the sum of Twenty Guineas.

#### *Defaulters.—Withdrawal of Fellows.*

9. All yearly payments are due in advance on the 1st of January, and if any Fellow of the Society have not paid his subscription before the 1st of July, he shall be applied to in writing by the Secretaries, and if the same be not paid before the 1st of January of the second

year, a written application shall again be made by the Secretaries, and the Fellow in arrear shall cease to receive the Society's publications, and shall not be entitled to any of the privileges of the Society until such arrears are paid; and if the subscription be not discharged before the 1st of February of the second year, the name of the Fellow thus in arrear shall be exhibited as a defaulter on a card suspended in the meeting-rooms; and if, at the next Anniversary Meeting, the amount still remain unpaid, the defaulter shall be announced to be no longer a Fellow of the Society, the reason for the same being at the same time assigned. No Fellow of the Society can withdraw his name from the Society's books, unless all arrears be paid; and no resignation will be deemed valid unless a written notice thereof be communicated to the Secretaries. No Fellow shall be entitled to vote at any Meeting of the Society until he shall have paid his subscription for the current year.

#### *Expulsion of Fellows.*

10. If any Fellow of the Society, or any Honorary Member, shall so demean himself that it would be for the dis-honour of the Society that he longer continue to be a Fellow or Member thereof, the Council shall take the matter into consideration; and if the majority of the Members of the Council present at some Meeting (of which and of the matter in hand such Fellow or Member, and every Member of the Council, shall have due notice) shall decide by ballot to recommend that such Fellow or Member be expelled from the Society, the President shall at the next Ordinary Meeting announce to the Society the recommendation of the Council, and at the following Meeting the question shall be decided by ballot, and if at least three-fourths of the number voting are in favour of the expulsion, the President shall forthwith cancel the name in the Fellowship-book, and shall say,—

“ By the authority and in the name  
“ of the Statistical Society, I do declare  
“ that A. B. (naming him) is no longer  
“ a Fellow (or Honorary Member)  
“ thereof.”

And such Fellow or Honorary Mem-

ber, shall thereupon cease to be of the Society.

### *Trustees.*

11. The property of the Society shall be vested in *three Trustees*, chosen by the Fellows. The Trustees are eligible to any other offices in the Society.

### *President, Council, and Officers.*

12. The Council shall, independent of the Honorary Vice-Presidents, consist of thirty-one Members, of whom one shall be the President, and four be nominated Vice-Presidents. The Council shall be elected as hereafter provided. Any five of the Council shall be a quorum. From the Council shall be chosen a *Treasurer* and *three Secretaries*, one of whom shall be a Foreign Secretary. Six Fellows, at least, who were not of the Council of the previous year, shall be annually elected.

### *Election of President and Officers.*

13. The President shall be chosen yearly by the Fellows. The same person shall not be eligible more than two years in succession.

The former Presidents who are continuing Fellows of the Society shall be Honorary Vice-Presidents; four Vice-Presidents shall be yearly chosen from the Council by the President.

Any Honorary Vice-President may take part in the deliberations of the Council on expressing a wish to that effect: and when attending the Meetings of the Council, shall exercise all the rights and powers of a Member of the Council.

The Treasurer and Secretaries shall be chosen yearly by the Fellows from the Council.

### *Election of Council.*

14. The Council shall, previously to the Anniversary Meeting, nominate, by ballot, the *Fellows whom they recommend* to be the next President and Council of the Society. They shall also recommend for election a Treasurer and three Secretaries. Notice shall be sent to every Fellow whose residence is known to be within the limits of the metropolitan post, at least a fortnight before the Anniversary Meeting, of the

names of Fellows recommended by the Council.

### *Extraordinary Vacancies.*

15. On any *extraordinary vacancy* of the Office of the President, or other Officer of the Society, or in the Council, the Secretaries shall summon the Council with as little delay as possible, and a majority of the Council, thereupon meeting in their usual place, shall, by ballot, and by a majority of those present, choose a new President, or other Officer of the Society, or Member of the Council, to be so until the next Anniversary Meeting.

### *Committees.*

16. The Council shall have power to appoint *Committees of Fellows* and also an Executive Committee of their own body. The Committees shall report their proceedings to the Council. No report shall be communicated to the Society which is not approved by the Council.

### *Meetings Ordinary and Anniversary.*

17. The *Ordinary Meetings* of the Society shall be monthly, or oftener, during the Session, which shall be from the 1st of November to the 1st of July, both inclusive, on such days and at such hours as the Council shall declare. The *Anniversary Meeting* shall be held on such day in June of each year as shall be appointed by the Council for the time being.

### *Business of Ordinary Meetings.*

18. The business of the *Ordinary Meetings* shall be to admit Fellows, to read and hear reports, letters, and papers on subjects interesting to the Society. Nothing relating to the rules or management of the Society shall be discussed at the Ordinary Meetings, except that the *Auditors' Report* shall be received at the Ordinary Meeting in February, and that the Minutes of the Anniversary Meeting, and of every Special General Meeting, shall be confirmed at the next Ordinary Meeting after the day of such Anniversary or Special General Meeting. *Strangers* may be introduced to the Ordinary

Meetings, by any Fellow, with the leave of the President, Vice-President, or other Fellow presiding at the Meeting.

#### *Business of Anniversary Meeting.*

19. The business of the *Anniversary Meeting* shall be to elect the Officers of the Society, and to discuss questions on its rules and management. No Fellows or Honorary Members shall be proposed or admitted at the Anniversary Meeting. No Fellow shall moot any question on the rules or management of the Society at the Anniversary Meeting, unless after *three weeks' notice* thereof given to the Council, but amendments to any motion may be brought forward without notice, so that they relate to the same subject of motion. The Council shall give fourteen days' notice to every Fellow of all questions of which such notice shall have been given to them.

#### *Special General Meetings.*

20. The Council may, at any time, call a *Special General Meeting* of the Society when it appears to them necessary. Any ten Fellows may require a Special General Meeting to be called, by notice in writing signed by them, delivered to one of the Secretaries at an Ordinary Meeting, specifying the questions to be moved. The Council shall, within one week of such notice, appoint a day for such Special General Meeting, and shall give one week's notice of every Special General Meeting, and of the questions to be moved, to every Fellow within the limits of the metropolitan post, whose residence is known. No business shall be brought forward at any Special General Meeting other than that specified in the notice for the same.

#### *Auditors.*

21. At the *first Ordinary Meeting* of each year, the Fellows shall choose two *Auditors*, not of the Council, who, with one of the Council, chosen by the Council, shall audit the Treasurer's accounts, and report thereon to the Society, which report shall be presented at the Ordinary Meeting in February. The Auditors shall be empowered to examine into the particulars of all expenditure of the funds of the Society

where they shall see occasion, and may report their opinion upon any part of it.

#### *Duties of the President.*

22. The *President* shall preside at all Meetings of the Society, Council, and Committees, which he shall attend, and in case of an equality of votes, shall have a second or casting vote. He shall sign all diplomas of admission of Honorary Members. He shall admit and expel Fellows and Honorary Members, according to the rules of the Society.

#### *Duties of the Treasurer.*

23. The *Treasurer* shall receive all moneys due to, and pay all moneys due from, the Society, and shall keep an account of his receipts and payments. No sum exceeding Ten Pounds shall be paid but by order of the Council, excepting always any lawful demand for rates or taxes. He shall invest the moneys of the Society in such manner as the Council shall from time to time direct.

#### *Duties of the Secretaries.*

24. The *Secretaries* shall, under the control of the Council, conduct the correspondence of the Society; they or one of them shall attend all Meetings of the Society and Council, and shall have the care of duly recording the Minutes of the Proceedings. They shall issue the requisite notices, and read such papers to the Society as the Council may direct.

#### *Powers of the Vice-Presidents.*

25. A *Vice-President*, whether Honorary or nominated, in the chair, shall act with the power of the President, in presiding and voting at any Meeting of the Society or Council, and in admitting Fellows; but no Vice-President shall be empowered to sign diplomas of admission of Honorary Members, or to expel Fellows. In the absence of the President and Vice-Presidents, any Fellow of the Society may be called upon, by the Fellows then present, to preside at an Ordinary Meeting. The Fellow so presiding may admit Fellows, but shall not be empowered to act otherwise as President, or Vice-President.

*Powers of the Council.*

26. The Council shall have control over the papers and funds of the Society, and may, as they shall see fit, direct the publication of papers and the expenditure of the funds, so, that they shall not at any time contract engagements on the part of the Society beyond the amount of the balance that would be at that time in the Treasurer's hands, if all pre-existing debts and liabilities had been satisfied.

27. The Council shall be empowered at any time to frame *Regulations* not inconsistent with these rules, which shall be, and remain in force until the next Anniversary Meeting at which they shall be either affirmed or annulled; but no Council shall have power to renew Regulations which have once

been disapproved at an Anniversary Meeting.

28. No Dividend, Gift, Division, or Bonus in money shall be made by the Society, unto or between any of the Fellows or Members, except as herein-after provided.

29. The Council shall publish a Journal of the Transactions of the Society, and such other Statistical Publications, as they may determine upon, and may from time to time pay such sums to Editors and their assistants, whether Fellows of the Society or not, as may be deemed advisable.

30. All communications to the Society are the property of the Society, unless the Council allow the right of property to be specially reserved by the Contributors.

A vote of thanks to the President, Council, and Officers for their services during the past year, was carried unanimously.

The proceedings terminated with a vote of thanks to Dr. Farr, the retiring President and Chairman of the Meeting.



*An ATTEMPT to ANSWER the QUESTION, WHY it is that so MUCH LAND is OCCUPIED and CULTIVATED by its OWNERS in FRANCE, and some other EUROPEAN COUNTRIES on the CONTINENT, and so LITTLE in ENGLAND? By GEORGE WARDE NORMAN, Esq., F.S.S.*

[Read before the Statistical Society, 17th June, 1873.]

LET us first look at the facts on which the question is founded.

It has been said by Mr. J. S. Mill, who was followed by others, that England contained only a few over 33,000 landowners. This was no doubt a mistake, the fact being simply that this number were thus described by themselves in the census returns, while many more owners of land employed some other designation.

At the same time it is certain that the number of landowners in England, when the inhabitants of villas near the large towns, of houses simply, or of houses with gardens annexed are deducted, is extremely small. The land in England is almost all cultivated by tenants who have no other property in it than the circulating capital embarked in implements, seed-corn, and crops, and the means of paying the wages of labourers. The farms are usually much larger than the holdings of owners or tenants across the channel.

It is a rare thing for an English cultivator to possess in property the land which he cultivates; it is still rarer for a man to purchase land with a view to derive a livelihood from its occupation; in truth, the writer never met with an instance of this, although he is aware that rich farmers, like other capitalists, often buy land, perhaps lying contiguous to their leased farms, and occupy such land themselves; if at a distance they would usually let it to others. It is said that in former days there were many small landowners in England, called Franklins and Yeomen, who cultivated and lived by the produce of their own land, thus representing partially the peasant proprietors of France, and this no doubt is true to a certain extent, but the separation of the ownership from the occupation is a very old fact in English history. From the final break-up of the feudal system, never so firmly established in this country as on the continent, the territory was divided into large estates, much more extensive indeed than those which now exist.

The Franklins and Yeomen of England usually sold their land, being tempted by the price offered for it, and the ease with which

they could increase their incomes by adopting other forms of investment. It is this circumstance, and this almost alone, which prevents the creation or existence of a class representing peasant proprietors in England.

This will appear the more remarkable when it is considered that land in England, all things considered, is rather exceptionally cheap. The normal price may be taken at thirty years' purchase, in a district possessing no particular advantages. When a man can buy under that price, he thinks that he has got a good bargain ; when he gives more, his friends are of opinion that his bidding has been too high. There is probably not a county in England where purchases of land may not be made at the above rate. Of course much higher prices are paid, in the case of land possessing an outside or ulterior value, as for building, extreme beauty, or vicinity to a neighbouring property, to which it forms an “angulus ille.” The same thing takes place doubtless on the continent. It is probable that the superior agriculture of tenant farmers, with their larger circulating capitals, helped to distance the yeomen in the race of competition.

There is another circumstance to which the reader's attention is called, as helping to explain the rarity of purchases of land in England, for the purpose of cultivation, and that is the peace which has reigned within its borders, since the close of the fifteenth century, and the general security of property, personal as well as real, under the influence of equal laws honestly administered.

The wealth of England is enormous, and much is invested in all sorts of mercantile undertakings at home and abroad. Then come the public funds and those of municipalities, and shares in railways, mines, &c. Thus, on the whole, the means of investment offered to an English capitalist are almost boundless, and are re-created as fast as they are absorbed. Besides the Englishman is an expensive person : he likes to live well ; and the low rate of return derivable from a purchase of land, cheap as it may be when compared with what is paid beyond the channel, does not tempt him.

A French peasant buys land at forty years' purchase, and borrows a part of the money to pay for it, at probably 6 per cent. interest, perhaps more. Such an operation would not enter into the head of an Englishman. But the Frenchman means to cultivate himself ; he does not calculate on the rentable value of his purchase, but merely considers if it will yield a surplus over the interest and taxes, when his own labour and that of his family have been expended upon it. Then until recently he never had any confidence in property other than land.

It may be now pointed out that the existence of three classes concerned with the land, viz., owners, tenants, and labourers—is a

natural state of things. It has grown up under the influence of what may be considered free trade: it is analogous to the factory system in manufactures. It is a system under which the produce of the land has been increased to an amount unequalled in any other country in Europe. A few comparisons on this point will be found hereafter.

Since the Wars of the Roses the soil of England has never for long together been desolated by war. That between the King and Parliament in the seventeenth century was of short duration, was carried on with great forbearance on both sides, left the greater part of the country untouched, and few traces behind it anywhere, except the ruins of some baronial castles. During the sixteenth, and early part of the seventeenth century, England was hardly exposed to foreign wars; but at the close of the seventeenth, during great part of the eighteenth, and the beginning of the nineteenth century, she carried on a series of wars which cost her no small loss of blood and an immense expenditure of treasure. Still the former did not check the increase of population; and the latter, according to the opinion of Mr. J. S. Mill, produced no sensible effect on the national wealth, being met partly by the enforced economy of taxpayers, and partly by a diminished number of financial crises. The wealth which was dissipated in the building of ships, the subsidies to foreign States, the pay of soldiers and sailors, would otherwise probably have been swept away in South Sea Bubbles, or in the absurd speculations which always occur when a vast accumulation of wealth lowers the rate of interest, and allures bold investors into dangerous and absurd speculations.

It may here be remarked that a great cause of the increasing wealth of England originated in the gradual growth of her manufactures, and the ever-increasing extent of her maritime commerce and of her mercantile marine. Had England been exposed to a long series of destructive foreign or domestic wars, or had her laws been unjust or ill administered, so that the motive to save, and the security of property when invested, had been lessened, the situation of the country would have been very different from that which we now see. It is probable, too, that land would have been more eagerly caught up by persons having money to lay out, and seeking for the only means of safely employing it.

We have cast a glance at the condition of England during the last three centuries. Let us now review that of France for the same period. During the sixteenth century, in addition to foreign wars, those of religion spread ruin and desolation through the land. The seventeenth century, again, was mainly occupied by a series of exhausting wars, and the same thing took place during the latter years of the reign of Louis XIV, and part of those of his two suc-

cessors ; while the revolutionary period, up to the final downfall of Napoleon the First, scattered the blood and money of the nation over Europe from Moscow to Cadiz.

The finances of the country were always in a disastrous condition. The ordinary resource of a finance minister was to cheat and plunder the national creditor. The laws varied in almost every province. Vast estates were held, either by the Church or the Noblesse under obsolete feudal tenures, which, although of small value to the owner, greatly impeded the progress of agriculture.

The great ingenuity and high intelligence of the French renders them well suited to become a manufacturing people, and during the seventeenth and eighteenth centuries they made great progress in this department of industry. But many of these manufactures were hot-house plants, too dependent on the favour and protection of the State to admit of a healthy and permanent development. The mercantile marine never reached a condition of persistent prosperity, the rather because, during every war, it was swept off the seas by the enormous superiority of the English navy. With the exception of San Domingo, and perhaps partially of Martinique and Guadaloupe, the French colonies acted as a drain on the mother country. Their establishment and defence involved great sacrifices, and they were finally lost.

What is here said of France is applicable, more or less, to the countries in her immediate neighbourhood.

It is said by some, that the agriculture of France deteriorated after the seventeenth century, and that previously it had been even superior to that England ; and this is attributed to the residence of so many of the Noblesse de Campagne on their estates, and their careful cultivation of their demesne lands. Upon this point I can form no decisive opinion, nor is the matter of any importance with reference to the object of this paper.

It may further be remarked, that the existence of peasant proprietors in France by no means commenced with the great revolution. Arthur Young found them there before its outbreak, but their numbers no doubt increased immensely afterwards. They ultimately became in a great degree the final purchasers of the vast mass of national property previously belonging to the church, to civil corporations, to emigrants, and to persons condemned by the tribunals. The ordinary process was, that portions of considerable extent were sold to speculators, who paid for them in assignats, and were resold to peasants, who, being already accustomed to see land cultivated by its owners, considered its utilisation in this form, that most natural and appropriate.

It is quite true that a large, probably the largest, part of France, is occupied by tenants paying rent in money, or by metayers,

paying rent in kind, under varying conditions, which it would take up too much time to explain, even had the writer the means of doing this, which he has not.

Lavergne expresses an opinion that the small proprietors who farm their own lands are better agriculturists than the tenants, although the latter have the advantage of being able to apply their whole capital to the actual business of cultivation ; and one cannot dispute the judgment of so competent an authority—but all are so bad that one need not enter upon a discussion as to who are the worst. It is probable that a certain standard of agricultural skill, and a certain method of cultivation, have been formed in each district, to which everybody more or less conforms.

It is rather remarkable that the metayer system appears to answer so badly in France. In Italy it exists to a very large extent, and co-exists with good husbandry in Lombardy ; while in Tuscany, the Val d'Arno, and the Val di Chiana, occupied almost wholly by metayers, exhibit an example of careful and judicious husbandry which can hardly be surpassed.

I have sometimes thought that the prevalence of the Roman law in France before the revolution, and that sort of *refaccimento* of the Roman law which forms the French codes at present, might have some special influence upon the existence of peasant proprietors in that country. The law of inheritance, so calculated to disperse property of all kinds, must, of course, have influence upon land as well as personality, but would be insufficient to produce the effect ; for why do not those who inherit land sell at once what pays them so badly ? In short, we must look for other cause or causes for the state of things which we see over the channel.

Now, it must here be observed that the soil and climate of France is not essentially different from that of England, until we get to the provinces which produce the vine, the maize, and the olive ; and that, on the whole, there seems no sufficient reason under this head why the same system of occupying land should not exist in both. Yet I fancy that peasant proprietors are found in the north, which so specially resembles England, while they are less frequent in the south where the metayer system is more commonly adopted.

One need hardly remark that, in point of race, there is much resemblance between the French and English. The former are Celto-Romans, with a strong German infusion, which took its origin in times anterior to Cæsar, and was reinforced by the Merovingian and Carlovingian conquests. The English are essentially Teutons of either the German or Scandinavian branches, with a slight Celto-Roman base, and a strong French addition.

I need hardly point out the errors of those who, upon the principle that any stick is good enough to beat a dog with, are

pleased to affirm that it is the high price of land and the expense of transfer which prevent the existence of a class of persons in England ready to purchase land, with a view of cultivating it themselves.

The ready answer, of course, is, that land is dearer in France than in England, and the expense of conveyance about three times more in the former country than in the latter.

I have now exhausted an enumeration of the causes which are at all likely to have led to the large extent to which the cultivation of land by its owners is carried on in France, and to the almost utter absence of this mode of cultivation in England, and come to the conclusion that its real cause is to be found in the internal peace, security of property, and good government which has so long existed in the latter country, and been wanting in the former; and this cause appears to me quite adequate to the production of the effect which we see.

I am convinced that a series of years of steady tranquillity, and due protection of property of all kinds, would produce a great change in the condition of rural France. That peasant proprietors would sell their little holdings and employ their money more profitably, instead of allowing them to be divided among their children, or if left united to be charged with heavy mortgages for all but one.

Indeed, it is said that a tendency of this kind was visible during the latter years of the empire, when few thought that a revolution was so near. It has now probably ceased to exist.

A few reflections upon the consequences, economical and social or political, which flow from the differences existing between France and England as respects the ownership and occupation of land, may fitly terminate this paper.

The soil and climate of France are far superior to those of England, as respects the means of agricultural production. Yet the result of Lavergne's careful researches shows that, when he wrote, the agricultural produce of England proper was, nearly as may be, twice as great as that of France for equal quantities of land; that wheat in the former country produced three hectolitres per hectare, in the latter only one and a-half, and that the relation as to the number and quality of domestic animals presented a similar result.

M. Lavergne values the whole agricultural produce of England at 3 milliards, 250 millions of francs, say 130,000,000*l.* sterling, but he points out that some allowance ought to be made for the different price of commodities in the two countries. This difference can hardly exist to any considerable extent, since the operation of thoroughly free trade on our part has been completely established, but as absolute exactness in such calculations is not required, as an approximation to the truth is all that we demand, let us assume that

the agricultural produce of England was only 100,000,000*l.* Now it has been shown, some way back, that to no other cause than to the mode in which the soil of France is owned and occupied can be attributed the state of its agriculture, and we can hardly be wrong in supposing that, were the soil of England similarly owned and occupied, her total income would be diminished by full 50,000,000*l.* per annum, or more than the annual expenditure of the State, independent of the interest of the debt.

Now, let us look at the converse of the above position. If France possessed a system of agriculture equal to that of England, the produce of her soil would be doubled. Now that produce, at a period anterior to 1848, is estimated by Lavergne at 5 milliards, or 200,000,000*l.* sterling. We may then say that France loses by agricultural deficiencies full that sum, but in order not to go beyond the mark, we will only say, that were the soil of France cultivated up to the English standard, the annual value derived from its soil would be 100,000,000*l.* sterling greater than it is, and this would be enough to pay the whole contribution to Germany in from two to three years.

And here, be it remarked, that all the classes employed in agriculture are far better off in England than in France. The population of the latter country can hardly be exceeded as respects industry, thrift, and the desire to accumulate. If they exhibit any inferiority to their neighbours similarly occupied on this side the channel, it can only be in an imperfect knowledge of the principles and practices of their art, and in an inferiority of energy. They labour early and late, but it is probable that the Englishman does more work in a given time than the Frenchman. If, however, we assume that this inferiority is balanced by the superiority of soil and climate, we may fairly place them on an equality as respects productive power.

Now what is the comparative result of the agriculture of the two countries? There is no reason to suppose that any relative change worth consideration has taken place during the last twenty years. Let us see, then, how things stood just before the publication of Lavergne's work, "Sur l'Economie Rural de l'Angleterre," of which my edition is dated 1855.

The English farmer is richer than the French farmer, or the class of small proprietors which most nearly corresponds to them. The English labourer is better lodged, fed, and clothed than the French labourer without land, or the small proprietors who are so numerous on the other side the channel: of course there are many gradations in both cases, but we cannot think Lavergne wrong in his views upon this part of our subject. So much, then, for the superiority of the English system of ownership and occupation of

land, in its economical aspect. When we turn to its political and social results the conclusions to which we are impelled to arrive are of a different character, and we must allow that France possesses many advantages.

There are probably as many persons possessing property of some kind, comparatively to the amount of population, in one country as in the other. We have the owners of houses, stock, or shares in various companies, or deposits in savings banks, and these would be far more numerous, especially among the artisan class, were it not for too early marriages, and the influence of poor laws; but these last-named kinds of property do not carry with them the same sort of conservative instincts as does the possession of land which a man owns and cultivates himself.

The peasant proprietors of France form the ballast, which has more than once saved the vessel of the State from being altogether upset and dashed against the rocks, amid the storms raised by contending factions.

The army, of which the kernel is formed from the families of peasant proprietors, has, in 1848 and 1872, by defeating the socialistic and communistic insurgents, saved property and society itself from an utter overthrow, and would do so again were its services required. The peasant proprietor is ignorant and obstinate, not a little envious, too, of the man who has broader acres than himself; but he has the sense to see that if the capital of the manufacturer is in requisition, his turn will probably come next, the rather because he has around him a number of labourers without land, to whom a portion of his fields would be very convenient.

The peasant proprietor, too, has the ordinary instincts of a propertied man in other respects. He likes tranquillity, has a dread of war and confusion, leaves with sorrow his native village, although he is readily converted into a brave soldier. He has no especial affection for any form of government, for theories are not in his line, but is ready to support any form of rule which gives him due security for the retention of his little modicum of land, divided perhaps into a dozen *parcilles*, out of whose wretched crops he manages to extract, with unremitting industry, a poor subsistence for his household. He is unfeignedly religious, and pays the utmost attention to the opinion and wishes of M. le Curé. I wish in many respects we had a similar class in England, but see no chance of that. We must be content to make the best of our materials, such as they are.

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DISCUSSION *on* MR. G. WARDE NORMAN'S PAPER.

MR. JAMES said there had been a great change in the mode of cultivation and the value of land in this country during the last forty years. A century ago the number of owners of land under cultivation was nearly ten times as great as at present, but since then the absorption of land by large landowners had been carried on to an enormous extent. In many cases money had been borrowed to accomplish this, at a higher rate of interest than could be obtained from the purchase. He knew of very few instances where the price of land exceeded thirty years' purchase; but in Herefordshire the ordinary run of purchases for the last forty-five years had been at twenty-eight and a-half years. As a rule, the owners of large tracts of land had been bad tenants on their own property. They had not failed to invest large sums of money in the cultivation, but, having the fee simple in themselves, they did not put aside out of their earnings a certain sum to cover rent and interest; consequently they had cultivated their own lands at a loss. In Herefordshire, thirty-five years ago, the tenant farmers occupied farms from 50 acres to 200 or 300 acres each, but since then a great change had taken place. Formerly the capital they invested was barely sufficient to enable them to work their lands so as to realise a profit, but now large capitals are invested, otherwise the steam machinery, which renders them less dependent on the weather, could not be employed. The result had been that the race of small tenants had died out. The farmers now cultivated in some cases 1,000 acres, and were gentlemen who had studied chemistry and had ample capital. In the eastern district of Hereford, towards Ledbury and Malvern, the land is heavy clays, where beans, peas, and barley were cultivated thirty years ago, and every fourth year the land was allowed to rest, and a year's produce was lost. The progress of farming had, however, greatly increased the amount of produce obtainable. Land belonging to Guy's Hospital, in the neighbourhood of Ross and Hereford, which fifty years ago was let for 10s. an acre, now fetched 3*l.* per acre, and the tenants were better off than when the land was cheaper. The absorption of land by gentlemen of fortune had of late years been so great, that small owners were very rare indeed.

Mr. WALFORD, referring to the late communistic movement in France, said, the theory of the Communists with regard to land was that it ought to be as free to the whole community as air and water, and he had been surprised to find with what intensity that view was held by some gentlemen. If, however, in England the desire to acquire land was extinguished, one of the greatest stimulants to exertion and enterprise would be removed. The one leading ambition of the mercantile community appeared to be to acquire

land, and to deprive them of that incentive would tend to destroy their energy and enterprise.

Sir JAMES ANDERSON said his observations and inquiries had convinced him that there were parts of France in which small holdings were the rule, while in other parts the holdings were generally large. In the latter case the farming was good and the population were well off, while where small holdings prevailed, there was a great deal of squalor, poverty, degradation, and submission to priestcraft; he wished the paper had dealt with statistics proving the relative value of the two systems.

Mr. ELLIOTT said, in the interesting book, "Conversations and Correspondence between De Tocqueville and Mr. Senior," it was stated that in some parts of Normandy the dwellings of the gentry were very much like those of the gentry in England, while the dwellings of the labouring people were exceedingly comfortable, very unlike the wretched hovels which the great mass of the people of France were content to dwell in. De Tocqueville even went so far as to say that their homes showed more real enjoyment of life than those of the labouring classes in many parts of England. Formerly there were people in Westmorland and Cumberland called "statesmen," exactly the class generally admired as types of rural felicity. How had it happened that these small owners had almost entirely disappeared, and their lands had fallen into the hands of large proprietors, many of whom had made fortunes in some of the great manufacturing centres? He had never been able to obtain a satisfactory answer to this question, except that those "statesmen" were intemperate and did not lead thrifty lives, so that they got into debt and were obliged to sell their property to those who would give a high and sometimes fancy price. He believed this to be one of the secrets of the diminution in the number of landed proprietors in this country. Perhaps, too, the 43rd Elizabeth had something to do with it. If the difference between the thrifty habits of the peasant of France and the unthrifty peasant of England was mainly referable to any law, it was that 43rd Elizabeth.

Mr. POWER said that the acreage under wheat in France was something like 17,000,000 acres, while in England it was not much over 3,000,000 acres. In France, however, there could be no doubt that the production per acre was very small, while the amount of seed used, on account of defective cultivation, was very large. The percentage of produce obtained from the seed sown was therefore very small. France, as an old settled country, was eminently susceptible to climate in the matter of its produce. In America, Russia, and other countries where there was a great extent of land in imperfect cultivation, the seasons had a much greater effect on the production per acre than in countries such as England, Belgium, and Germany. The corn crop in France was, therefore, very variable, in a good season being very much larger than in a bad one. This would seem to show that in its practical result the system of small holdings in France was not successful.

Mr. JAMES said in France the implements used were of a very primitive character, while in England the improvements in machinery had to a great extent counteracted the effects of bad weather.

Mr. LUMLEY protested against the paper as being unsuited to the Statistical Society. There was not one atom of statistics in it. It contained nothing but broad assertions of certain views which Mr. Norman entertained with regard to the state of things in England as compared with France. No information whatever was given by which the accuracy of the conclusions might be tested. The paper was well suited for another society, but the Statistical Society wanted statistics so arranged that deductions might be drawn from them.

Mr. J. G. BROWN said the writer of the paper was a gentleman well known in the best mercantile circles of London, and far advanced in years. He had travelled all over the continent, making good use of keen powers of observation, and a rare and well-balanced intelligence; and especially, considering his great age, the Society must feel grateful to him for taking the trouble to prepare such a paper. A paper should not always be ignored because it did not contain tables of statistics; the writer not unnaturally taking it for granted that those whom he addressed were as familiar with the well known statistics on the subject as himself. He (Mr. Brown) had resided both in Upper and Lower Canada, where he had seen and compared the effects of the two systems of large and small holdings. Along the banks of the St. Lawrence in Lower Canada, where the French system prevailed as it had for over two hundred years, the peasant proprietors were very poor and very ignorant: 200 miles further up the river, in Upper Canada, things were entirely different. Large farms were there farmed by free-minded Englishmen, Scotchmen, and Irishmen, with energy, skill, and capital as in England. He believed that the system of large farms was preferable to that of small farms, for by the use of steam machinery the produce of the land could in the large holdings be greatly increased. There could be no doubt that the small farms were a very serious drawback to France; they tended to dwindle men's minds, whereas a large farm would expand a man's faculties. Reference had been made to gentlemen buying farms at fancy prices, but such practices are exceptional, and could not continue so as to be held as any rule or final test on this subject. Ultimately the land in large holdings must get into the hands of men of skill and capital, and that system would prove to be the cheapest, and every way the best for the interests of the entire community.

Sir CHARLES DILKE said some of the land in Lower Canada, along the banks of the St. Lawrence, was the very worst land on the American continent, and he should look for an explanation of the poverty and misery of the inhabitants rather to the character of the land than to the tenure. The extremely favourable experience of small farms in Guernsey raised considerable doubt as to the truth of the statement that small farms were a drawback to the

production. Undoubtedly in some parts of France the population living on very small farms was very poor and miserable, but, on the other hand, there were parts where a similar population, living on farms equally small, was a wealthy population, accumulating money very fast. He did not think that small farming or large farming had so much to do with the question as the richness or poverty of the soil. In Guernsey the soil was rich and the climate good, particularly for root crops, and there, as in the Plain of Vaud, in Switzerland, great wealth was accumulated by farmers of very small farms. Men living on patches of 10 or 12 acres were sometimes possessors of large fortunes, accumulated from no other source than the farms. The paper which had been read was of a very loose character, and the reasons put forward for certain things which were stated for facts seemed to him merely suggested reasons not backed by any facts.

Mr. DROOP said that a detailed comparison of the size of the holdings in different parts of France with the state of the law of succession there before the Revolution, would render it possible to form a much more decided opinion as to the connection between the law of equal partition or succession and the present subdivided state of property in that country. The district most divided was Alsace, and there the law of equal partition had existed long before the Revolution, and it would be believed be found, that generally the parts now most subdivided were those in which equal subdivision had prevailed before the Revolution. Sir Charles Dilke's explanation of the unsatisfactory condition of the small proprietors in Lower Canada, showed that they had for many years continued to farm their small holdings of poor land. If the district had been owned by large proprietors, and the poorer classes been only tenants and labourers, probably the redundant population would have migrated to the fertile districts adjoining, where they would be better off and their labour more productive; but the fact of the small holdings being their own property made them reluctant to move.

Professor JEVONS said there were few questions more difficult of solution than that of the origin of the difference in the holding of land. There were many other points of difference between the industrial systems adopted in England and France. For instance, why was it that such an extensive system of banking prevailed in England, when in the country towns of France banking was almost unknown. What was the tendency of things in the present day, towards large farms or small farms? He was of opinion that there was a distinct tendency to a division of labour; that one man should be the owner and another the leaseholder. Then arose the question whether a man with little capital would be likely to invest in the purchase of land yielding only 3 per cent., when, by using the capital on the farm, he could get a much higher profit. Where so great a difference existed, he did not see how it was possible for the workers of land to be also the owners. Attention should be directed to perfecting a system of leases and tenant right, and not wasted

on a hopeless endeavour to establish peasant proprietors in England. Peasant proprietors naturally sprang up where land had little or no rent, but where the rents were large, it was striving against the laws of nature to attempt to maintain small holdings worked by poor owners.

The CHAIRMAN said he knew an instance of a farmer, the owner of certain fields which were very badly cultivated so long as he continued to own them, but no sooner had he sold them, and exchanged the condition of proprietor for that of tenant, paying a full rent, than a complete change took place in his mode of cultivation, so that his crops became the admiration of the whole neighbourhood. It seemed as if his obligation to pay a distinct sum as rent, at fixed intervals of time, acted as a wholesome stimulus to him to exert himself. The speaker thought that this case was by no means an uncommon one.

Mr. FREDERICK PURDY said a large fund of information with regard to the holdings of land in different countries of Europe was to be found in reports from our consuls and ministers abroad. It was not fair to make a comparison between an ignorant French peasant on poor land, and a rich energetic Scotchman on good land. In order to form a true comparison, large holdings and small holdings of the same quality of land and worked by the same class of cultivators with equal advantages in the way of means, must be compared, and then tested as to the value of the respective results.

The CHAIRMAN said the meeting was much indebted to Mr. Norman for bringing this paper before them. If some objection had been taken to the absence of figures, it should be remembered that seeing the great labour involved in the compilation of statistical papers, it was scarcely reasonable to expect that eight or ten papers fully entitled to that name could be forthcoming every Session.

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SUGGESTIONS for a GOVERNMENT LOAN by MEANS of a NEW FORM  
of SECURITY to be termed "ACCUMULATIVE BONDS." By SIR  
HENRY BARRON, BART., *Secretary of Legation.*

" L'épargne est l'élément le plus puissant des progrès matériels de la société : sans l'épargne des générations précédentes nous n'aurions ni habitations, ni outils, ni routes ni canaux, ni campagnes fertiles ni villes florissantes. C'est grâce aux économies de nos pères que la civilisation a pu atteindre le degré d'élévation auquel elle est aujourd'hui parvenue. C'est par nos économies qu'elle continuera dans l'avenir sa marche progressive."

*From a Belgian Official Document of 1859 on Savings Banks.*

§ 1. THERE are three classes of investors in Government funds:—

1. Those who seek a fixed and perpetual interest for their capital.
2. Those who invest for purposes of speculation.
3. Those who seek to increase their capital by annually reinvesting their interest.

The first of these classes already enjoys every facility that can be desired for investing their capital at every rate of interest from 3 to 30 per cent. With reference to the second class, the following scheme is not devised for the advantage of speculators, but it will, by simplifying calculations, prove very convenient for them.

§ 2. This scheme is addressed solely to the third class of investors, viz., to those who wish to improve their capital by the patient and honest accumulation of the interest produced by it. All States wisely encourage this tendency in the working class, by the institution of savings banks, even at a loss to the treasury. Saving and forethought are evidently the mainstay of every family high or low, as they are the chief lever of the national prosperity and riches. This wholesome and irrepressible passion of human nature, ought surely to be encouraged by every statesman. Hundreds of millions of pounds are annually looking for employment in Europe, which must proceed from the savings of the present generation. My object is now to offer to the great middle class a means of not only investing but accumulating their savings, and this is a mode which shall be equally profitable to both borrower and lender, in other words, to provide a savings bank for all classes.

§ 3. I propose a new form of Government loan, which shall offer to investors the reimbursement of their capital at double its present value by the operation of compound interest. A loan of, say 1,000,000l., contracted at the rate of 5 per cent., requires a perpetual annuity

of 50,000*l.* for the payment of interest, will thus absorb in a century a sum of 5,000,000*l.* for interest alone, and nevertheless remains the same undiminished burden on the shoulders of the nation. The national debt is indeed the tub of the Danaïdes. The same loan may be entirely extinguished in 31·33 years by a terminable annuity of 63,836*l.*, which will only involve an aggregate expenditure of 2,000,000*l.* Surely a simple statement of these figures is enough to decide the question, if there can be any question between these two alternatives. The subscribers to the loan will receive, not a terminable annuity, but an accumulative bond for 200*l.*, to be repaid at this uniform rate by equal annual drawings spread over a period of 31·33 years, therefore in a mean term of 15·66 years. The fixed principle and essence of this scheme consists in the reimbursement of every bond at double its original amount, which increased value represents the compound interest.

§ 4. The rate of interest, the amount of the annuity, and the number of years are the three variable terms of the loan. These will be found to be corelative to each other in a fixed inverse ratio. The law which governs this ratio is interesting to examine. Any one of these three terms being given, is enough to elicit the two others! There are, therefore, three problems which will arise in connection with a loan of this nature, according to that one of the three terms which is given. I propose to discuss the three formulas necessary for solving those three problems, and then to present a tabular statement showing the figures resulting from different rates of interest. It will be found that with the increase of the rate of interest the annuity must increase, and the term of years decrease in a certain proportion.

§ 5. *The advantages of this innovation may be reduced to five.* As there are five principal interests that will be affected by it, I propose to consider its bearing on all these interests, viz.:—

1. On the *public interests of society in general.*
2. On the *financial interest of the State.*
3. On the *interest of the lenders.*
4. On the *interest of the bankers or financial houses who issue the loan.*
5. On the *interest of speculators.*

I will expose the advantages to be expected from this scheme under the above five different heads, and will also discuss the objections, if any, which may be advanced against it. I need hardly premise that this scheme is not intended to supersede, but only to compete with other forms of loan. It will be certainly a complete novelty, as nothing of the kind has ever yet been issued or even proposed. It is different from all so-called lottery loans, though it has one feature in common with them, that of being repayable at

compound interest. In all these lottery loans, a few monster prizes are held out as baits to entrap the public, while the real value of the bond is purposely made so inscrutable as to baffle the acutest mathematician. They all, however, have one feature in common, which entirely distinguishes them from my scheme, viz., that they uniformly postpone the bulk of repayments to the remotest possible date, generally to the next century; whereas my bonds are paid off at the full uniform rate from the very first year of the loan to the last. The value of these bonds may therefore always be readily estimated, while in lottery bonds the meagreness of the interest is always concealed under a “toilette tapagente” of monster prizes. Whatever its merits or demerits may be, this scheme is entirely different from every other as yet existing or projected. As it is destined, in my opinion, to great success, I claim, at least, the entire merit of its conception.

§ 6. *The public interest is my only consideration in bringing forward this scheme.* If savings banks are good, so are accumulative bonds. They will constitute a savings bank for the public at large, with all the advantages and none of the cost of those institutions. It is idle to dilate on the great public service rendered by savings banks, but their field of operation is small, and they are conducted at a loss to the State, though the interest paid to depositors is only 3 per cent., therefore less than that paid by the funds. Surely there is room for improvement here in the interest of the working class alone. But their savings are small compared to those of other classes. The savings of our forefathers constitute the riches of the nation. To encourage this virtue is therefore to promote the prosperity of the nation as well as that of every individual family. This form of loan, which is calculated in the highest degree to promote this end, deserves, therefore, the favour of the Government on moral and social grounds. I do not see any objection that can be urged against it. There is nothing in it to stimulate gambling; but, on the contrary, the harmless attraction of the annual drawing is calculated to divert the public from the dangerous allurements of the Stock Exchange. It will, therefore, promote more than one social interest.

§ 7. *The State as a borrower is interested in raising money at the lowest possible rate of interest.* Experience has shown that a terminable annuity is more economical to the State than a perpetual one. This principle has been observed in all our financial operations of recent years. We have clearly no right to saddle all future generations with a perpetual debt for the purpose of satisfying our prodigalities of the day. The system of perpetual annuities is onerous, improvident, and unjust. A debt contracted by the nation, say in 1773, has now been paid five times over in the shape of

interest, and yet remains the same dead weight on the shoulders of the nation till the end of time or till a national bankruptcy. Yet it might have been easily paid off in thirty-two years by a slight annual sum added to the interest.

§ 8. *The system of terminable annuities* is now recognised in England, both in theory and practice, as the true principle. It is, however, open to one objection, stated as follows by McCulloch, “We look upon all attempts, and particularly those made by Government, to get individuals to exchange capital for annuities, “as radically objectionable, and as being subversive of principles “which ought to be strengthened rather than weakened.” My scheme is not open to the above just criticism, as it preserves the capital of individuals, while affording to the State all the advantages of a terminable annuity. As compared with the two rival systems of terminable annuities and of sinking funds, whether voluntary or compulsory as hitherto practised, all the advantages will, I think, be found on the side of the accumulative bonds. The certainty of the repayment of the capital, will enable a loan on this principle to be floated at a lower rate of interest than any other, at least such is my opinion, which may be mistaken. But that it will facilitate saving among individuals, will reduce the cost of management, and will bring the aggregate cost of each loan into a fixed well-defined compass, these are propositions which cannot be contested.

§ 9. Thirdly. *The investing public will profit in an equal degree with the State by this innovation.* That large class of investors who only require to increase their capital, will find this the best, indeed practically the only form of security to thoroughly answer their purpose. They will no longer have to go to the Stock Exchange twice or four times a-year for the sake of investing their dividends. Their capital grows every day at compound interest, and comes back to them doubled without trouble, loss, risk, letter writing, or expenses of any kind to themselves. The probabilities of the reimbursement being spread evenly over a fixed term of years, clearly defined beforehand, can be calculated by a child, whereas the drawings of the old type are in the first years of the loan quite infinitesimal. These are solid advantages which must attract immense numbers, especially to the first loan issued on the accumulative principle, which will be unique in the world.

§ 10. Fourthly. There is every reason to believe that the *contractor of a similar loan would realise a large profit.* I am convinced that the accumulative bonds would be eagerly sought after, even at a higher price than bonds of the old type paying the same rate of interest. This is a fair conclusion from the favour shown to bonds, even with the present illusory drawings, as compared with loans without any drawings at all. On the other hand, it may happen

that the public will not respond to the first experiment of this kind. This is a contingency very easy to provide against, by dividing a loan into accumulative and ordinary bonds, and offering both to the public simultaneously, both bearing the same intrinsic rate of interest. By this means the only possible loss to be apprehended would be that of printing a certain number of superfluous bonds. Even that might be avoided by only printing the bonds after the subscription. This seems to be the fairest mode in which to sound the public taste. There is here a wide field for speculation, but a speculation in which there is, I think, much to gain and certainly nothing to lose. The first accumulative loan will probably be most profitable to the contractor, as being unique of its kind it will, at first, have no competition to contend against. The risk being practically *nil*, it would seem to be surely worth while to try the experiment.

§ 11. *The fifth and last advantage of the accumulative bonds consists in their superiority as an instrument of speculation.* In the eye of the moralist this quality will not add to, or detract from, their value, as it will not increase or diminish the amount of speculation which already exists. But it will certainly attract the attention of speculators, and should therefore have its weight with the banker or finance company called upon to issue a loan. This quality must add to the future popularity and marketableness of the bonds. The absence of coupons must enormously simplify all operations connected with the sale, transfer, custody, and quotation of the bonds, and must keep them at an uniform price throughout the year, fluctuating only in obedience to the political and financial currents of the time. Their quoted price will not be vitiated by varying sums of accruing interest to be deducted from the same. Their intrinsic value will remain constant throughout the year, but will tend to rise gradually from one year to another in a mathematical progression. This absence of coupons ought to suppress or to cheapen “contangoes,” and therefore to make these bonds the favourite speculative stock.

§ 12. It is evident that if England is ever to pay off her debt, it must be by means of terminable annuities. These accumulative bonds, which constitute an improvement of the same principle, would enable us to realise the above consummation. The amount of the national funded debt was in 1872 730,986,000*l.*, paying an interest of 22,156,952*l.*, equal to about 3 per cent. on the nominal capital. The present value of the debt, at the current price of consols (say 92), would be only 672,507,000*l.* The rate of interest implied by the above rate of 92, is  $3\frac{1}{4}$  per cent. This figure may be assumed to be the present exponent of British credit. At this rate of interest an annuity of 41,248*l.* will pay off a capital of

1,000,000*l.* in 48·4869 years; therefore an annuity of 30,152,288*l.*, would pay off the whole nominal capital of the debt within the same period. But if the capital of the debt, which is purely nominal, and, owing to the improvidence of former Governments, is about 40 per cent. more than the sum really borrowed, were reduced by only 8 per cent. to the above sum of 672,507,000*l.*, its present market value, the annuity required for its extinction in forty-eight and a-half years, would be only 27,739,380*l.*, therefore only 5,572,848*l.* more than the perpetual annuity now payable. The nation is rich and patriotic enough to bear this brief additional taxation in order to secure so vast a prize.

§ 13. To pay off the national debt at its present nominal value by means of a terminable annuity in forty-eight and a-half years, would perhaps overtax our strength. In this case the burden might be diminished by extending the term to eighty-six years, and the annual charge would be reduced to 3·4718 per cent., or to an aggregate of 25,378,858*l.* per annum on the present nominal capital, or 23,347,855*l.* on the reduced capital. In either case the addition to our burdens would be quite insignificant. But if the debt can be reduced, as I think just and feasible, at its present market value of 92, to 672,507,000*l.*, it could and should be extinguished in forty-eight and a-half years. *Each holder of stock should be offered the option of two alternatives, viz., either to receive a terminable annuity of 3·81*l.* per cent. instead of this present perpetual annuity of 3*l.*, or in lieu of it an accumulative bond for 184*l.* (double the present value of his capital), to be paid off by equal annual drawings spread over the intervening forty-eight and a-half years, therefore within a mean term of twenty-four and a-quarter years.* The certainty of the repayment of the capital, coupled with the option of receiving payment in either of two forms, would more than compensate for the nominal reduction of the fundholder's capital. If the term of eighty-six years be adopted, it would enable 100*l.* stock to be paid off at 300*l.* by annual drawings. The term of forty-eight and a-half years would, however, be much more prudent and advantageous, as that term would only entail an aggregate sacrifice of double instead of three times the present value of our debt.

§ 14. *The sum of 5,572,000*l.* for forty-eight and a-half years is all that is now required to pay off the national debt in the mode which I propose.* Surely this would be well bestowed for the purpose of casting this millstone from our necks, and unpawning the national patrimony. Little or no addition to our present burdens would be necessary, for we have already a surplus of 3,000,000*l.* or 4,000,000*l.* to dispose of. Any deficiency might be easily supplied by an export duty on coal, which would be generally welcomed by the nation at large as a measure of prudence and humanity, as well as a tax more

just and unobjectionable than many which we are now paying. Some unknown sum is now annually devoted to the redemption of our debt; the same sum expended on a constant definite mathematical principle, would have a much more tangible effect than that resulting from our present fitful, desultory, and mysterious system. The institution of terminable annuities, due to Messrs. Gladstone and Lowe, must be admitted to have done good service. The accumulative bonds would prove an adjunct—not a rival—to this system, and another step in advance. In grappling with the national debt, they would facilitate this vast operation by presenting a valuable alternative to be offered to trustees and other fund-holders in lieu of terminable or perpetual annuities. They would be eagerly sought for by those who require to preserve and increase their capital, an object which is entirely frustrated by a terminable annuity. Another great national desideratum, which has been so ably proposed by Mr. Biddulph Martin, viz., the purchase of railways by the State, would be also materially facilitated by the creation of accumulative bonds in conjunction with terminable annuities, to be offered to the option of stockholders,

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## APPENDIX.

*Table of Amortisation of a Loan of 1,000,000*l.* Divided into 10,000 Bonds of 100*l.*, to be Paid Off at 200*l.* by equal Annual Drawings, which Sum is to include Compound Interest; Showing the Amount of each Annuity, the Number of Annuities, and the Number of Bonds Paid Off each Year at the following Rates of Interest.*

Rate of Interest. Per cent.	Annuity. <i>£</i>	Years.	Number of Bonds Paid Off Annually.
3	38,042·08	52·5733	190·2104
3½	41,248·17	48·4869	206·2409
3⅔	44,459·89	44·9843	222·2993
4	50,900·27	39·2925	254·5014
4½	57,363·35	34·8654	286·8167
5	63,849·29	31·3237	319·2464
5½	70,358·25	28·4259	351·7913
6	76,890·41	26·0110	384·4521
7	90,024·91	22·2160	450·1246
8	103,254·11	19·3696	516·2706
9	116,579·30	17·1557	582·8965
10	130,001·84	15·3844	650·0092
11	143,523·12	13·9350	717·6156
12	157,144·52	12·7271	785·7226

As the bonds cannot be subdivided, the fractions of a bond may be disregarded for a time, until they enable one more bond to be paid off, say every four or five years. It may possibly be thought preferable to pay off all these redundant bonds together in the last year, which arrangement would entail an advantage to the borrower, slightly disturbing the economy of the loan.

*Solution of the Three Problems connected with “Accumulative” Bonds.*

In working questions connected with these bonds, the capital of the debt is known and the sum of all the payments is known to be double the original capital. The other elements which enter into consideration are :—

1. The rate of interest.
2. The amount of each annuity.
3. The number of these annual payments.

*Any one of these three terms being given, is sufficient to elicit the other two quantities.* The process is interesting but intricate, requiring the application of the higher branches of algebra and logarithms. It is, however, possible to solve all three problems by a simple rule of three, with the assistance of a book of annuity

tables. I begin by assuming that a State issues a loan of 1,000,000*l.* divided into 10,000 bonds of 100*l.* each, repayable at 200*l.* by a number of equal terminable annuities, amounting in the aggregate to 2,000,000*l.*, which sum represents the original capital of, and the compound interest accruing on the loan.

*Question I.* The rate of interest being given, it is required to know the amount of each annuity and the number of years.

Take a table of "present values" and look down the column of the given rate till a present value is found which is equal to half the number of years standing opposite to it, that number of years will be the answer. Probably no exact number will be found, but there will be two consecutive "present values," one greater and the other less than half the number of years opposite to it. The true number of years will be between these two, and the fraction of the year can be found, if extreme accuracy be not required, by interpolation. Thus, if the rate of interest be 5 per cent., on looking down the table of "present values" we find the "present value" of 1*l.* per annum

For 31 years to be 15.5928*l.* [more than half the years].  
 „ 32 „ 15.8027*l.* [less „ ].

The true answer must be between thirty-one and thirty-two years. If we had the right number of years and subtracted half from the present value, the remainder would be zero. But here as the present value—

For 31 years instead of 15.5 is 15.5921 <i>l.</i> , therefore too much by +.0928	
„ 32 „ „ 16.0 „ 15.8027 <i>l.</i> , „ „ little „ —.1973	
The total of these discrepancies on either side, viz. ....	
<u>.2901</u>	

represents the effect of one year on the present value. In other words, a difference of one year in the time makes a difference of .2901*l.* in the present value. As, therefore, thirty-one years are too little, it may be assumed that the fraction of a year to be added to thirty-one years, will bear the same ratio to one year as .0928*l.* does to .2901*l.* This is easily found by the following rule of three:—

$$.2901 : .0928 :: 1 : x. \quad x = .3195.$$

Therefore the number of years is 31.3195.

When once the number of annual payments is known, the amount of each is found by dividing the sum of these payments, which we know to be 2,000,000*l.*, by the number of years; the result would be 63,857.66*l.* This result, elicited by interpolation, is however only approximative, and less accurate than that of 63,849.29*l.* inscribed in the table of amortisation resulting from direct calculation.

*Question II.* When the amount of each annual payment is given, it is required to find the rate of interest and the number of annual payments.

Assuming the amount of the annuity to be 50,000*l.*, the number of years may be found by dividing 2,000,000*l.*, the sum of the payments, by 50,000, which gives forty years.

Then take the same tables of annuities and look through the tables of "present values" at different rates of interest, until we find two consecutive rates as close as possible, under one of which, opposite the given number of years, there is a "present value" greater than half and under the other less than half of that given number. The required rate of interest will be between these two consecutive rates.

In the present instance, the time being forty years, the present value of 1*l.* annuity

$$\begin{array}{ll} \text{For } 40 \text{ years will be found to be at } 4 \text{ per cent.} = 19.79277\text{i}. & [\text{less than half}]. \\ \text{,} & \text{, } 3\frac{3}{4} \text{, } = 20.55099\text{i}. & [\text{more } , ]. \end{array}$$

The true rate is, therefore, between the above two rates, and may be found with sufficient accuracy by interpolation, according to the following formula :—

$$20.55099 - 19.79277 : 20 - 19.79277 :: 4 - 3\frac{3}{4} : x.$$

$x$  will be = 3.932, which is the rate of interest required.

£
Subtracting
From
<hr/>
We obtain
<hr/>

which is therefore the difference in the "present value," corresponding to a difference of a quarter per cent. in the rate of interest. But the present value at the required rate must be 20, therefore it must differ from the present value at 4 per cent.—

£
Which is
<hr/>
By
<hr/>

We, therefore, say :—

$$.75822 : .20723 :: \frac{1}{4} : x.$$

This gives  $x = .068$ , which subtracted from 4 per cent., gives 3.932, the rate of interest required.

*Question III.* The number of annual payments being given, it is required to find the amount of each annual payment and the rate of interest.

This problem is practically identical with the last. When the number of payments is given, the amount of each may be found by simply dividing their sum, which we know to be 2,000,000*l.*, by the number of years. If we assume that number to be 20, the amount of each annual payment will evidently be 100,000*l.* On looking down the table of annuities, we find that at twenty years the rate of interest must be between 7 and 8 per cent., for

£	
At 7 per cent. the present value of 1 <i>l.</i> for twenty years =	10.59401
,, 8                         ,,                         =	9.81814
The difference therefore .....	0.77587

corresponds to a difference in the rate of interest of 1 per cent. The true rate of interest may now be found by the same process of interpolation as above under Question II.

We know that the "present value" at the—

£	
Required rate is.....	10.0
We have found that at 8 per cent. it is ....	9.81814
Difference .....	18186

The rate of interest decreases as the "present value" increases, though not in a strictly inverse ratio. We may however assume, for facility of calculation, that the differences are proportional. We know that the true present value at the required rate of interest is greater than the present value at the rate of 8 per cent. by 0.18186*l.*

We may assume, therefore, that the true rate of interest is less than 8 per cent. by a fraction, which shall bear the same ratio to 1 per cent. that 18186 does to 77587, the figure representing the difference of present value corresponding to a difference of 1 per cent. in the rate of interest.

We say, therefore:

$$.77587 : .18186 :: 1 : x.$$

x is here found to be .....	0.23439
This sum therefore subtracted from .....	8.00000
Gives.....	7.76561

which is the rate of interest required.

## MISCELLANEA.

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*I.—General Results of the Commercial and Financial History and Review of 1872.*

FROM the *Economist* of the 15th March, 1873:—

This is the tenth of the series which has appeared in that paper. (See *Journal*, vol. xxxv, pp. 127—146.) As customary, only the general introduction to the history is printed here *in extenso*. But the further scope and importance of the review are sufficiently indicated by the titles of the subdivisions and of the appended tables. (See list at pp. 431 and 432.)

“ 1872 will be remarkable and important as a year in which a general and rapid rise of the prices of commodities and the wages of labour, and especially of the prices and wages relating to the primary and ‘instrumental’ articles of coal and iron compelled the attention of the whole country—as a year of defective harvest, cattle plague, and excessive rainfall—as the period of a severe and threatening autumn pressure in the money market; as the interval within which France succeeded in raising the loan required to discharge the German subsidy and release French territory from the invading troops; as the period of the final conclusion of the dispute between England and the United States arising out of the affairs of the ‘Alabama;’ and finally, as the year which witnessed the spread all over Germany, Austria, and Central and South-Eastern Europe, of an activity and scope of commercial and industrial enterprise far beyond any former experience of those countries.

“ But of all the events of the year the profound economic changes generated by the rise of prices and wages in this country, in Central and Western Europe, and in the United States, has been the most full of moment; and hence, in order to bring together as large a body of authentic evidence as possible, and from a variety of quarters, we have not hesitated to enlarge and extend the collection of materials contained in our Annual History, and in the Appendices attached to it.

“ The year opened with us in the midst of an exciting controversy with the United States, regarding the claim by them of hundreds of millions sterling for ‘indirect’ damages occasioned by

the cruise of the 'Alabama' and similar vessels alleged to have been carelessly permitted to be built and fitted out in British ports. The American 'Case' founded these indirect claims on clauses in the Treaty of Washington of July, 1871, asserted to sanction them. The vehement indignation with which all classes and degrees in this country repudiated the American demand, undoubtedly surprised the politicians of Congress, and conveyed to them, in a style not to be forgotten, that beyond a certain limit the patience of the British people could not be trifled with; and the six months of animated discussion which preceded and prepared the way for the rejection by the Geneva arbitrators of the American demand, will probably be useful in future in moderating to some degree the style and tone of transatlantic diplomacy in its dealings with this country. The Treaty of Washington represented the utmost limit of concession possible by Great Britain, and the decisions of the Geneva Tribunal founded upon it, have carried the doctrine of the liability of neutrals to a point of almost impracticable accomplishment. So long as the four millions of British subjects in Canada remain exposed to an overpowering American invasion, it is not possible that any large question can be settled on its merits between Washington and London. A few years, however, may suffice to see Canada independent, and England—free from the embarrassment of Canadian interests—perfectly well able to deal as indifferently with the continent of North America as with the continent of Africa. In the meantime the progress of the United States in national wealth is beyond calculation. The principal of the debt is in rapid course of reduction (see Appendix Y), and the Government has effected already large conversions of the Six per Cent. portions of it into Five per Cents., while the resumption of cash payments in 1874 is now being discussed. Their fiscal system is still barbarous, and disfigured by a host of duties protective, mischievous and demoralising. They tax, for example, a raw material like coal, and their tariff has long ago extinguished shipbuilding.\* But the unbounded

\* "The following amusing and instructive narrative is from the *Detroit Free Press* of October, 1872, under the title of Crossing the Border:—

"At least every tenth woman who crosses the Detroit river carries smuggled goods. The custom house officials at the ferry dock are as vigilant as officers can be, but what chances have they against monster hoop skirts and gigantic bustles? They cannot stop to peep under shawls, examine pockets, look into baby carts, and hold a crowd on the boat, and so they must continue their work with the knowledge that goods are being smuggled, and that only one grand and sudden haul of their nets can trap the guilty and frighten the innocent so that they shall never dare to pursue the business. The net was drawn yesterday, 21st October, 1872. The officers commenced about 2 o'clock walking fifteen or twenty women upstairs into the customs room, and handing them over to a woman to be searched. Every boat load which landed for about three hours, was treated in the same manner—that is, all the female portion. During the afternoon about one hundred and fifty women were confronted by Uncle Sam, and the old man had a good deal of fun,

resources of the Western States, aided in their development by incessant railroad expansion, yields ever-increasing wealth. The Southern States are full of discontent and lawlessness, and a few years may witness serious difficulties with the survivors of the Confederate War. The great commercial scandals of Tweed, Fisk, Jay, Gould, and the Erie and Tammany 'Rings' have rather changed in character than been abated. Tweed has been set at liberty by a jury, and Gould is still a prominent citizen (see Appendix Z). The latest exposures have affected conspicuous members of the Senate and the House of Representatives, and have included even Mr. Colfax, the Speaker of the latter body.

"France has made solid material progress in 1872. The great loan of 140 millions sterling of July, 1872, issued to provide the remainder of the payments to Prussia and to liberate the French territory in the course of 1873 has been absorbed *bonâ fide* by the French people themselves—as stated by the circular of the Credit Lyonnais (see Appendix W) in the largest degree in small sums—and that so effectually, that the loan has borne a steady and increasing premium. The harvest of 1872 in France was abundant and excellent. The vintage was also good. The mass of the French people are meeting the new and heavy taxes by means of thrift, self-denial, and more severe labour. The Assembly at Versailles is ignorant and prejudiced on all fiscal questions, and M. Thiers is quite incapable of leading them into wise courses. But apart from politics, France is steadily recovering from the prostration of the war, and if out of all the chaos of conflicting interest and dynasties we could suppose a reasonably good Government to emerge, but a short time would elapse before French influence would again be formidable. The death of the Emperor both simplifies and embarrasses the situation. Personally he had become a cypher. Bad health and age had cut him off from active interference in political intrigue, but he leaves pretenders who must for many years live by agitation and conspiracy. The Emperor failed chiefly because, with many enlightened ideas, he had no principle of policy outside himself and his position; and because he was wholly deficient in those qualities of intellect and heart which attract the services and

and made some wonderful discoveries. For instance, a modest little woman, who was in a great hurry to go home to her sick child, pulled out a few pins and 10 yards of English flannel fell to the floor. A tall woman, with tears in her eyes, who asserted that she would sooner chop her head off than think of smuggling, unfastened a pound of tea from her skeleton, and asserted that it must have been placed there by some designing person. Another indignantly denied 'the right of search,' but after remaining a prisoner for an hour or two, told the searcher to 'take it and go to grass,' throwing a package of ribbons and laces on the floor. A lot of calico was found on another, some velvet on another, and at least 10 per cent. of the whole number were found to be engaged in smuggling. The officials were satisfied with confiscating the goods."

enthusiasm of the best men of a State, and therefore infuse life and perpetuity into schemes of administration and policy.

"The negotiations for a new Commercial Treaty between France and England (see Appendix R) in substitution for the Cobden Treaty of 1860, occupied some degree of attention during the summer and autumn, and in October a document was at length put into official form, though it is not as yet easy to state the precise effect of it. Oddly enough, the most active opponent of the treaty was the Manchester Chamber of Commerce. That chamber has quite satisfied itself that the alleged immense benefits said to be conferred by the Treaty of 1860 on the cotton trade, are not discernable in fact, and that a purely independent course in this country in reducing duties on wines, silks, and fancy goods, whether obtained from France or elsewhere, would have answered just as well as the apparatus and diplomacy of a treaty. On one point all parties were agreed, viz., that those parts of the instrument of 1860 which restrained this country from imposing or altering the duties of import or export on certain articles, could not, under any circumstances, be renewed. It was also found that the favoured nation clause led to endless complication. At this moment, for example, when suggestions are being made, rightly or wrongly, for placing in this country an export duty on coal, it is found that under the Treaty of 1860 with France we could not place an export duty on coal sent to that country till after March, 1873, but then we have a treaty with the Zollverein, which, until 1877, forbids any export duty on coal sent to Germany, and as the new treaty with France gives to that country the most favoured nation clause, France would stand in the same category as the Zollverein. Then there is a treaty with Austria which contains similar reservations. So that the policy of the export duty on coal is wholly removed from serious discussion for several years to come.

"The industrial and commercial development of the whole of Germany and of Austria, Hungary, and the south-east of Europe, advances by strides which are most insufficiently understood among us. In the Austrian States the progress is astounding. The Vienna Government and Legislature are no longer the heavy and perpetual drag and discouragement on all new enterprises which they were a few years ago. On the contrary, their spirit of practical and progressive reform sets an example to other nations. All over the rich countries of the Danube, capital and labour are vigorously at work in discovering and turning to profit the amazing resources which have been lying unheeded for centuries.

"The same changes are operating in Germany (see Appendix U). A few years have sufficed to sweep away nearly all the feudal and obsolete impediments to enterprise and skill which kept Germany

so far in the rear. The French payments have done a little towards German enterprise since 1870—but the revision and enlargement of the domestic policy—the removal, for a time at least, of all fear of France, and the vigour of a central authority, have done much more. The chief hindrance left is the exacting nature of the military conscription. It is the springing up, as it were, of seventy or eighty millions of people in Central Europe, from profound sleep into active industrial life, which has occasioned the wonderful demand for Iron and Steel and other manufactures during the last ten years.

“Italy has recovered a little since 1871. Spain has not recovered at all, but the reverse.

“The Harvest of 1872 in the United Kingdom was not favourable. The following are the usual figures:—

(I).—*Gazette Average Price of Wheat (per Imperial Quarter) in United Kingdom, immediately after Harvest, 1863-72, and Total Averages of Calendar Year.*

	After Harvest.		Yearly Average.		
	s.	d.	s.	d.	
1872 .....	58	6	1872 .....	57	—
'71 .....	56	3	'71 .....	56	8
'70 .....	48	6	'70 .....	46	11
'69 .....	46	2	'69 .....	48	2
1868 .....	53	6	1868 .....	63	9
'67 .....	70	8	'67 .....	64	6
'66 .....	52	6	'66 .....	49	11
1865 .....	42	4	1865 .....	41	10
'64 .....	38	6	'64 .....	40	2
'63 .....	40	—	'63 .....	44	9

“The price immediately after harvest (58s. 6d.) is the highest in the table, and the average of the calendar year 1872 (say 57s.) is the highest since 1868, when it was 63s. 9d. The authorities quoted *passim* estimate the yield of *Wheat* at 24 bushels per acre, or 6 bushels under average; quality inferior, and weight per bushel 3 lbs. below average; *Barley* 10 per cent. below average; *Oats* decidedly over average; *Beans* 15 per cent. above average; *Peas* very abundant; *Potatoes* largely a failure; *Root Crops* nearly all good; and *Hay* decidedly above average. Mr. Caird estimates (*passim*) that in the twelve months ending September, 1873, we shall require an importation of 12 millions of quarters of foreign wheat and flour, costing nearly 30 millions sterling, to say nothing of the inferior kinds of grain.

“Down to the autumn the Cattle Plague in various forms was prevalent in nearly every county of England and Wales, and the results were destructive. But towards the end of the year there

was a marked abatement of the diseases, an amelioration attributed by the best authorities to the purifying action of the excessive rainfall on the soil and atmosphere. The official returns show an increase in the number of cattle and sheep.

"The Rainfall of 1872 has been the largest of any year since 1852. The average rainfall in England and Wales is (say) 24 inches—that of 1872 has been  $46\frac{1}{2}$  inches—or nearly double. In 1860 the fall was 41 inches, and in 1866 it was 40 inches. The years 1868 and 1870 were seasons of severe drought, and it is certain that the large rainfall of 1872 will do little more than restore the equilibrium which was effected by those dry years. The calculations of the meteorologists that in 1872 there fell on *each square acre* an excess of 2,000 tons of rain water over the average—or taking the total area of England, 66,000 *million tons* in excess of the average fall—suggest faintly the inconceivably vast scale on which natural phenomena operate.

"The following Table (II) gives the usual figures regarding the export of gold and silver to the East in 1872 and the eleven preceding years:—

(II).—*Export of Gold and Silver to Egypt and East, per Peninsular and Oriental and French Steamers, 1861-72.*

[0,000's omitted, thus 3,39 = 3,390,000*l.*]

Year.	Gold.		Silver.		Totals.
	Mln. £	Mln. £	Mln. £	Mln. £	
1872 .....	3,39		6,52		9,91
'71 .....	3,28		3,89		6,17
'70 .....	2,08		2,23		4,31
'69 .....	2,62		6,44		9,06
1868 .....	6,52		3,56		10,08
'67 .....	1,65		2,05		3,70
'66 .....	2,87		7,07		9,95
1865 .....	4,35		9,74		14,09
'64 .....	6,97		16,96		23,92
'63 .....	8,02		15,13		23,16
'62 .....	3,40		14,60		18,00
'61 .....	1,43		8,86		10,28
Totals, twelve years, 1861-72 .....	46,58		97,25		143,63
Average .....	3,90		8,10		12,00

"The export of gold in 1872 has been nearly the same as in 1871, but the export of silver is 60 per cent. higher—nearly 10 millions against 6—the chief distinction being India.

"But the predominant events of last year, as regards transfers of coin and bullion from one country to another, have of course

taken place in connection with the payment by France of the German indemnity. It would be useful to recapitulate the facts in a condensed form.

" In 1st June, 1871, France raised a loan of 80 millions sterling to provide the payment of the first instalment of 80 millions as part of the total ransom of 200 millions. From this 80 millions Germany allowed a deduction of 13 millions for the railways in Alsace, reducing the amount to 67 millions—but to this result 6½ millions were added for interest—leaving the actual payments by France as follows:—

	£
1871. May—September—Cash and bills.....	47,215,000
'72. January—February—Chiefly bills .....	26,500,000
	<hr/> <u>73,715,000</u>

" In July, 1872, France issued a second loan of 140 millions sterling, in order to meet the remaining 120 millions of the ransom with interest and expenses, and out of this second loan the payments to Germany were and are to be:—

	£
1872. September .....	20,000,000
'73. 1st February .....	£20,000,000
'74. 1st March .....	40,000,000
'75.     ,, .....	40,000,000
	<hr/> <u>100,000,000</u>
	<hr/> <u>120,000,000</u>

" The instalments of the loan of July, 1872, extend over eighteen months, or to 11th April, 1874, but large portions continue to be paid in full, and it is probable that France will be able to anticipate by six or even twelve months the final payment to Germany of March, 1875.

" The actual component parts of the (say) 120 millions paid to Germany up to the early part of October, 1872, are as follows:—

	£
French gold and silver .....	6,400,000
Bank notes—French .....	£5,000,000
,,      German.....	3,200,000
	<hr/> 8,200,000
Bills of exchange—On Belgium and Holland....	16,000,000
,,      Germany .....	40,000,000
	<hr/> 56,000,000
,,      England .....	24,000,000
	<hr/> 80,000,000
	<hr/> 94,600,000
Allowed for Alsace railways .....	13,000,000
Indemnities paid by various towns during } the war in gold or French notes .....	12,000,000
	<hr/> 25,000,000
	<hr/> 119,000,000

" It may be safely said that this is the most astounding account ever made up, whether as regards its origin—the magnitude of the payments, or the component items. The insignificance of the  $6\frac{1}{2}$  millions of coin, as compared with the general total of 106 millions of total transfer bills, notes, and coin is striking. The 80 millions of bills of exchange on Holland, Germany, and England represent the excess of commodities which France has furnished in order to meet the ransom, and it is almost incredible that so vast an excess of exports can have been provided in so short a time with so little apparent derangement and with so slight a fall of the Exchange on Paris. The discount on the notes of the Bank of France has not, so far, been more than 10 per cent., and the bullion in that establishment has been maintained at 30 millions.

" Next to the effect and nature of the French payments has been the extent of the absorption of gold and silver in Germany for the purposes of the new imperial coinage in pursuance of the law of November, 1871 (see *Review*, 1871, Appendix A).

" At the end of 1872, the gold coinage amounted to 21 millions sterling. On 8th February, 1873, it had been raised to  $23\frac{1}{2}$  millions sterling, and the following paragraphs from the well-informed city writer of the *Daily News* give the latest facts, and properly draws attention to their important character:—

" "The new German Coinage Bill is sufficiently advanced to have been submitted to the Emperor, and the German newspapers now publish the text of the proposed measure. Contrary to a statement which has been made implying that there will be a *double standard* of gold and silver, the proposal is distinctly one *for a gold standard only*. The first article of the proposed law provides that in place of the various existing standards in the provinces of the Empire, there shall be substituted the imperial gold standard, with the mark for amount, according to the law of 4th December, 1871. The provision is come in force throughout the whole empire by an imperial decree, to be issued with the consent of the Imperial Council, but an interval of not less than six months is to be allowed after the issue of the decree. The second article of the new law provides for the issue of *subsidiary coins* as follows:—*Silver*, 5-mark, 1-mark, and  $\frac{1}{2}$ -mark pieces; *nickel*, 10-pfennig and 5-pfennig pieces; and *copper*, 2-pfennig and 1-pfennig pieces. But by Article 3 it is provided that in no case shall the silver coinage exceed 10 marks per head of the population (limiting the total to about 20,000,000*l.*); and Article 8 provides that silver money shall not be legal tender in any payment exceeding 50 marks, and nickel and copper money in any payment exceeding  $\frac{1}{2}$  mark. The Bill contains numerous other provisions chiefly with relation to the provisional tariff between the old and new money; but the above are the main points of the new system which will be of interest here. The proposal plainly is to provide Germany with a coinage very similar to our own, with a *gold standard*; and with a *subsidiary*

*coinage* which will only be legal tender for limited amounts. If the Government policy is adopted by the Reichsrath, a strong demand for gold for Germany is sure to continue.'

"The same authority followed up the subject with further details as follows:—

"‘The announcement which we made yesterday (26th February, 1873) that the German Government will propose to the Reichsrath the adoption of a *single gold standard*, gives a new interest to the question of the amount of gold which the Government will require. We noticed last week that, according to the detailed statements brought down to the 1st of February, 1873, the rate of coinage had again become *about half-a-million sterling a-week*; and from a week’s later statement, viz., to the 8th of February, it appears that the coinage of that week was 9,497,500 marks, or about 475,000*l.* At this rate the demands of the German Government for gold must be considerable. It appears, moreover, according to the preamble to the new law, as reported in the ‘Cologne Gazette,’ that the *average weekly coinage* must now be much higher even than half-a-million sterling. It is there stated that the amount to be coined before the 1st of April, as a necessary condition of the introduction of the new money (but not as the entire amount that will finally be required), is 600,000,000 marks in 10 and 20-mark pieces, or about 30,000,000*l.*

"‘As the *total coinage* on 8th February, 1873, was 468,749,800 marks, or 23,408,000*l.*, this would leave to be coined in the interval between 8th February and 1st April, 1873, about 6,500,000*l.*, or about 900,000*l.* per week. With such a rate of coinage in progress, the German purchases of gold in London must continue, and failing immediate arrivals, which do not seem probable, recourse must be had to the Bank of England.’

"According to this statement, the German gold coinage will amount to 30 millions sterling on 1st April, 1873. To what further extent the coinage may be ultimately carried is at present matter of speculation. The *Daily News* discusses the case thus:—

"‘The statement which we published yesterday in our money article respecting the proposed Bill which the German Government will submit to the Reichsrath on the subject of the coinage, will possess a double interest. The Bill is another blow to the hopes of the promoters of international coinage. The German Government, though doing England the honour of copying the English series of coins very closely, makes a sufficient difference in value to prevent the coins of the two countries being interchangeable.

"‘It was previously known that the gold coins of the new system would be a 20-mark piece, almost but not quite equal to an English sovereign, being worth 19*s.* 7*d.* instead of 20*s.*; and a 10-mark piece, corresponding to half-a-sovereign, but worth only 9*s.* 9*½d.* Now we learn that it is proposed to have a 5-mark piece, which will answer to our abolished crown piece, but will be worth

only 4s.  $10\frac{3}{4}$ d.; a 1-mark piece, which will answer to our shilling, but will be worth only  $11\frac{3}{4}$ d.; and a  $\frac{1}{2}$ -mark piece, which will answer to our sixpence, but will be worth about half-a-farthing less. There will be more variety of nickel and copper coins than in our system; but the gold and silver coins will be as vexatiously close to the English in series and value as we have described. It is no unsafe prophecy that one of the drawbacks to the new German system, if carried out as now proposed, will be the popular endeavour of Germans to pass off their sovereigns, half-sovereigns, shillings, and sixpences for English, and that much confusion and individual loss will ensue. The philanthropists who promote international coinage, may well despair at the choice which Germany is making.\*

“ ‘The second point of interest in the new measure is the light which is thrown on the probable demand of Germany for gold during the next few years. By the present Bill the German Government is certainly paying England the compliment of adopting its single gold standard, but the cost of the measure to the London and other money markets cannot but be great. Only to introduce the new system, the German Government must have 30,000,000*l.* of the new gold coinage ready in six weeks, and must continue coining 50,000,000*l.* or 20,000,000*l.* annually for several years to come. As the annual new supply of gold throughout the world is reckoned at little more than 20,000,000*l.*, and the usual demand for miscellaneous purposes is very large, it follows that, if the German Government perseveres in its policy, the strain upon existing stocks and currencies of gold will be most severe. For a time, at least, unless the annual production of gold should suddenly increase, the money markets of the world are likely to be perturbed by this bullion scarcity, and the fall in the value of gold, of which so much has been heard, will be checked or reversed.’

“ The bullion reserve of the Bank of Prussia (Berlin) has remained steady at about 27 millions sterling since May, 1872 (see Appendix Ea). The circumstances which will determine the rate of growth of the German gold coinage after the 30 millions is attained and fairly put into circulation will depend on four conditions, viz., (1). The efficiency of the subsidiary silver and copper coins in supplying the retail transactions. (2). The denomination and credit of the bank note circulation of various kinds. (3). The spread of banking habits and facilities (cheques, credits, drafts) over the country. (4). The range of prices and the magnitude of the total dealings. The economical transformation in Germany

\* “ ‘It appears to have been settled in the German States Council that the *new coinage system* shall include the maintenance of the *thaler*, in deference to the strong Prussian leaning to that hitherto national piece. But it is to become officially a ‘piece of 3-marks.’ The main currency will be in marks of the value of our shilling; and there are to be also half-marks in silver, equal to sixpences, and 5-marks, equal to our crown pieces. A proposal for an additional piece of  $2\frac{1}{2}$ -marks, equivalent to the half-crown, of which Great Britain is gradually, though very

(see Appendix U) has become so radical and rapid, that we should rely greatly on the first and second of these indicated conditions as being sufficient to keep within harmless limits the absorption of gold for coinage during the next year or two. The liberation of silver in consequence of the final adoption of a single gold standard must be large, and it is difficult at present to see in what way the excess will be disposed of. Holland (see Appendix X) after much deliberation has resolved to set up for the present a double standard in place of the silver standard, which it hastily adopted in 1852. There can be no hazard in predicting that for many years to come all the annual supplies of gold on the present or even upon an enlarged scale, will barely suffice for the demands which are even now apparent.

"In Appendices T and X we reprint a series of articles which place in systematic order the evidence relating to the effect produced by the gold discoveries.

"The authority quoted *passim*, describes the general results of the Cotton Trade of 1872 as follows:—'From every point of view the past year has formed quite a contrast to its immediate predecessor. 1871 was a year of unexampled prosperity to every one in the industry, whether as importers, exporters, or consumers, but 1872 has been a year of constant anxiety, disappointment, and general unprofitableness. The most carefully conceived statistical and commercial forecasts have been ruthlessly falsified by the course of events. After the enormous business and rapid advance in values which took place in the latter months of 1871, it was naturally anticipated that a calmer state of things would be witnessed during the opening months of 1872; on the contrary, however, there was intensified excitement in January and February; *the business done during the first six months of 1872 being the largest on record.*'

"The following Table (III) continues the information of former years regarding average import price and consumption:—

slowly, getting rid, has been rejected in the Council. The decision in favour of the *mark* and its multiples and fractions, must be of course approved in detail by the Diet: but the Governments represented in the Council having all accepted it, after a good deal of discussion, there can be little doubt of its passing, and of the speedy disappearance of the gulden, or 1*s. 8d.* florin, hitherto the standard of currency throughout South Germany. Indeed, some of the administrations there have already taken preliminary steps towards calling their portion of the old circulation in. It is greatly to be regretted that as Germany has selected a unit so very near our own in value, she should not have gone a little farther, and made her silver mark and gold 10-mark pieces absolutely identical in weight and value.' —*Pall Mall Gazette.*

(III).—*United Kingdom, 1857-72. Estimated Value of Raw Cotton Imported, Re-Exported, and Consumed. (Ellison's Circular.)*[00,000's omitted, thus 53,3 = 53,300,000l. The *bales* are given in full.]

Years.	Import.		Re-Exported.	Consumed, United Kingdom.		
	Value.	Price.	Value.	Value.	Total Weight.	Bales per Week, 400 lbs. each.
	Mln.	Per lb. £ <i>d.</i>	Mln.	Mln.	Mln. lbs.	No.
1872.....	53,3	9 $\frac{5}{16}$	8,5	48,0	1,175,	56,510
'71.....	55,9	8	9,8	40,8	1,205,	57,950
'70.....	51,0	9 $\frac{5}{16}$	8,2	42,1	1,071,	51,520
'69.....	55,2	11 $\frac{1}{16}$	11,3	43,8	940,	45,140
1868.....	52,0	9 $\frac{5}{8}$	11,6	41,0	996,	47,890
'67.....	53,8	10 $\frac{1}{8}$	14,0	41,2	954,	45,890
'66.....	75,8	13 $\frac{1}{2}$	19,5	51,9	800,	42,829
1865.....	63,2	15 $\frac{3}{4}$	17,1	47,2	718,	34,550
'64.....	82,2	22	22,1	52,4	561,	26,980
'63.....	58,0	20 $\frac{1}{2}$	21,6	40,7	476,	22,910
1862.....	31,1	14	12,4	24,7	449,	21,620
'61.....	38,7	7 $\frac{3}{8}$	7,9	32,2	1,005,	49,800
'60.....	36,6	6 $\frac{3}{8}$	5,5	28,9	1,079,	51,890
1859.....	32,2	6 $\frac{1}{2}$	4,1	27,6	977,	47,000
'58.....	27,2	6 $\frac{5}{8}$	3,3	24,8	907,	Not given
'57.....	28,6	7 $\frac{1}{8}$	3,5	24,8	825,	

"The import price is 15 per cent. above that of 1871, and 50 per cent. above the price of the normal pre-war year 1860, nor does there seem to be any immediate prospect of much reduction. 'With a prospective supply for 1873,' say Messrs. Ellison (*passim*), 'very little, if at all, greater than the present consuming power of Europe, and only about 2 $\frac{7}{8}$  per cent. greater than the actual average deliveries of the past two years (1871-72), prices on the average of the year 1873 will not perhaps greatly vary from the revenue of 1871-72, say 9 $\frac{1}{2}$ d. for middling Uplands, and 7 $\frac{1}{8}$ d. for fair Dhollerah, any important average advance on these rates would lead to economy and reduced consumption as in 1872, any material decline would stimulate demand as in 1871.'

"The next Table (IV) has been enlarged from former years, and now shows in *pounds weight* as the best test the *quantity of cloth and yarn consumed at home, and exported in each year 1857-72*, with collateral columns of the average prices of raw cotton as imported, exported, and consumed at home.

(IV).—*Cotton Cloth and Yarn, Exported and Estimated as Actually Consumed at Home, 1857-72, in Millions of Pounds Weight.* (Ellison's Circular.)

[000,000's omitted.]

Years.	Yarns and Cloth Exported.			Home Consumption, Yarns and Cloth.	Total Weight.	Average Prices of Raw Cotton.		
	Yarn.	Cloth.	Total.			Imported.	Exported.	Home Consumption.
	Mln. lbs.	Mln. lbs.	Mln. lbs.			Mln. lbs.	Per lb.	Per lb.
1872....	212,	698,	910,	145,	1,055,	9 $\frac{5}{16}$	7 $\frac{1}{2}$	9 $\frac{3}{4}$
'71....	193,	680,	873,	185,	1,058,	8	7	8 $\frac{1}{4}$
'70....	186,	616,	802,	140,	942,	9 $\frac{1}{2}$	8 $\frac{1}{2}$	9 $\frac{3}{4}$
'69....	169,	535,	704,	125,	829,	11 $\frac{1}{4}$	10	11 $\frac{1}{4}$
1868....	174,	548,	723,	160,	883,	9 $\frac{1}{2}$	8 $\frac{3}{4}$	9 $\frac{1}{3}$
'67....	164,	523,	687,	145,	832,	10 $\frac{1}{2}$	9 $\frac{1}{2}$	10 $\frac{3}{8}$
'66....	134,	491,	625,	145,	770,	13 $\frac{1}{2}$	11 $\frac{7}{8}$	14
1865....	98,	377,	475,	150,	625,	15 $\frac{3}{4}$	14 $\frac{1}{8}$	15 $\frac{3}{4}$
'64....	71,	332,	403,	110,	513,	22	21 $\frac{1}{2}$	22 $\frac{7}{8}$
'63....	70,	321,	392,	93,	485,	20 $\frac{1}{8}$	19 $\frac{7}{8}$	20 $\frac{1}{2}$
1862....	88,	324,	412,	102,	514,	14	13 $\frac{3}{4}$	14 $\frac{1}{4}$
'61....	177,	496,	674,	174,	848,	7 $\frac{3}{8}$	6 $\frac{1}{8}$	7 $\frac{3}{8}$
'60....	197,	542,	740,	173,	913,	6 $\frac{1}{2}$	5 $\frac{1}{4}$	6 $\frac{1}{2}$
1859....	192,	500,	693,	172,	865,	6 $\frac{1}{4}$	5 $\frac{3}{4}$	6 $\frac{3}{8}$
'58....	200,	452,	652,	158,	810,	6 $\frac{5}{8}$	"	"
'57....	176,	466,	583,	156,	739,	7 $\frac{1}{8}$	6 $\frac{1}{8}$	7 $\frac{1}{4}$

“The evidence of these figures is remarkable as showing, first, the increasing command of the foreign markets for *cloth*, or finished goods; second, the small increase in the exports of *yarn*, or half finished goods; third, the comparatively stationary home consumption, indicating the resort to linen, woollen, and other materials; fourth, that while the home consumption was 20 per cent. of the total manufacture in 1860, it has fallen to 12 per cent. in 1872. The total manufacture of last year was 14 per cent. in excess of the great year 1860. All these facts indicate the substantial soundness of the cotton trade of this country, and the increase on the whole of the economical advantages so far possessed by Lancashire over all foreign rivals.

“In the next Table (V) we give the distribution of *cotton piece goods* to the leading markets in 1871-72 and in 1860, stated in quantities of millions of yards:—

(V).—*Exports of Cotton Piece Goods, 1872-71 and 1860, in Quantities (Millions of Yards) and Percentage of Totals.* (Ellison's Circular.)

[000,000's omitted.]

Exported to	Quantities.			Per Cent. of Total.		
	1872.	1871.	1860.	1872.	1871.	1860.
	Mln. yds.	Mln. yds.	Mln. yds.	Per cent.	Per cent.	Per cent.
India and Egypt .....	1,255,	1,291,	910,	33·5	37·9	32·9
China .....	464,	551,	324,	13·1	16·2	11·7
Turkey and Levant .....	330,	244,	272,	9·3	7·2	9·8
	2,039,	2,086,	1,506,	57·9	61·3	54·4
United States .....	132,	129,	226,	3·7	3·8	8·2
West of America and W. I.	668,	619,	527,	19·0	18·1	19·0
	2,839,	2,834,	2,259,	80·6	83·2	81·6
Italy, Austria, &c. ....	219,	186,	198,	6·2	5·5	7·1
Germany.....	130,	107,	102,	3·7	3·1	3·7
Other Countries.....	247,	280,	217,	9·5	8·2	7·6
	3,535,	3,410,	2,776,	100·0	100·0	100·0

" India and China are still the predominant customers for our cotton goods, and between them consume very nearly one-half of the entire export manufacture. It is open to doubt, however, whether the conditions under which the export of cotton goods to the East has been for some time carried on are in a really sound state. Lancashire is always complaining of failures in the India trade. Since November (1872) the failures in the cotton districts and largely among firms trading to India have been heavy, and amount probably to three or four millions. The failure in September last of the old London and Calcutta house of Gledstanes and Co., with liabilities amounting to nearly two millions and very spare assets, was another illustration of the same evils. The vice of the present system is twofold; first, the excessive credit given by the manufacturer at Manchester, or the merchant there who buys of him first hand, to weak and speculative shipping houses on this side—the seller taking the acceptance of the buyer at four or six months, but carefully keeping his lien on the goods till sold in India, and stipulating that the remittances arising out of such sale should be sent home to meet the acceptances he holds; second, the excessive usance at which shipping houses in India are able to sell their bills on England. This usance is six months' date, and cases continually occur in which the goods drawn against arrive by steamer or canal six or seven weeks before the six months' drafts mature, and the acceptor has the use of the money in the interval, and is tempted to apply it not always prudently. These six months' bills will of course be drawn so long as the London discount market

will take them: and weak, sanguine people will continue to buy masses of goods at Manchester, so long as the manufacturers and merchants there will sell them at long credit. The peril consists in carrying on a distant, uncertain, and fluctuating trade by people who live from hand to mouth, and sink or swim just as the chapter of accidents may render a year profitable or the reverse.

"Gledstanes and Co. had been unsound since 1866, if not earlier, and the failure was in many ways disgraceful. It is among the scandals of the time that the parties were allowed to escape without exposure and punishment.

"The next Table (VI) gives the American cotton crops, 1867-68 to 1871-72, and the estimate for 1872-73:—

(VI).—*American Cotton Crops, 1867-68 to 1871-72.* (Ellison's Circular.)

[In 1,000's of bales.]

Detail.	1872-73. Estimate.	1871-72.	1870-71.	1869-70.	1868-69.	1867-68.
Total crop.....	3,700	2,975	4,347	3,155	2,414	2,577
<i>Exported to—</i>						
Great Britain .... }   2,466 {	1,454	2,343	1,475	990	1,229	
France ..... }	184	138	346	225	123	
Other places ..... }	319	649	352	233	239	
<i>Consumed in—</i>						
Northern States }	—	1,957	3,140	2,173	1,448	1,657
Southern „ }	1,000 {	978	1,032	838	839	819
		121	91	90	153	146
Stock at end of season	—	3,056	4,263	3,101	2,440	2,618
	—	55	108	60	11	37

*Note.*—The *pre-war* cotton crops and consumption in the States and export to Great Britain were:—

[In 1,000's of bales.]

Years.	Crop.	Consumed in United States.	Exported to Great Britain.	Price in Liverpool.
1856-57 .....	2,990	702	1,428	d. $7\frac{1}{2}$
'57-58 .....	3,118	470	1,810	$6\frac{5}{8}$
'58-59 .....	3,850	770	2,050	6
'59-60 .....	6,075	810	2,670	$6\frac{1}{2}$
'60-61 .....	3,660	670	2,175	$7\frac{3}{4}$

“ The crop of 1871-72 fell far short of the  $4\frac{3}{4}$  million of bales of 1870-71—the crop which gave so immense a start to the recovery of the United States, and which also re-established the cotton trade in Europe, to the serious derangement, however, of the Indian commerce and the commerce with those other countries where, under the stimulus of the high prices of 1861-65, the production of cotton had attained vast dimensions.

“ The following Table (VII) shows that from all these countries the imports of raw cotton have been stationary or declining during the last two years, and are likely to be still more so in 1873 :—

(VII).—*Raw Cotton, Imports (in Bales) into Europe, 1871-72 Actual, 1873 Estimated, and Average Weight of Bales in 1872.*

[000's omitted, thus 2,466, = 2,466,000.]

From	1873. Estimated.	1872.	1871.	Average Weight of Bales, 1872.
United States .....	2,466,	2,036,	3,114,	lbs. 439
Brazil .....	760,	1,000,	680,	160
Mediterranean .....	560,	513,	445,	480
West Indies .....	240,	237,	240,	210
East „ .....	1,550,	1,696,	1,538,	360
	5,576,	5,488,	6,017,	273

“ We compile the final Table (VIII) on this subject from the elaborate calculations in Ellison's Circular (*passim*). The object of these calculations has been by the application of very complete knowledge of the cotton market and manufacture, to express in figures, of course in a degree approximate, the ultimate financial results of the whole industry in this country year by year, from 1857 to the present time. This is done by calculating (1) the total value in each year of the cotton goods produced; (2) the total cost of the raw cotton used up in such production; and (3) the residue left to cover wages, interest of capital, wear and tear, repairs, and store expenses, and lastly profits. The figures are probably as nearly true as any compilation of the kind applied to so large a surface are likely to be.

“ The following is the table :—

(VIII).—*Cotton Trade, General Results, 1857-72. Estimate, per Ellison's Circular of (1) Total Value of Goods Produced; (2) Cost of Raw Cotton Consumed therefor; and (3) Balance left for Profits, Interest, Wages, and Expenses.*

[00,000's omitted.]

Year.	Total Value of Goods Produced.	Cost of Raw Cotton.	Left for Wages, Profit, and other Expenses.	Year.	Total Value of Goods Produced.	Cost of Raw Cotton.	Left for Wages, Profit, and other Expenses.
1872....	102,3	48,0	54,3	1864....	76,4	52,5	23,9
'71....	102,0	40,8	61,2	'63....	59,8	40,6	19,2
1870....	93,1	42,1	51,0	1862....	42,7	26,7	16,0
'69....	86,2	34,8	42,4	'61....	74,3	32,2	42,1
'68....	91,7	41,0	51,7	'60....	80,6	28,9	51,7
1867....	90,4	41,2	49,2	1859....	72,2	27,6	44,6
'66....	102,7	51,9	50,8	'58....	63,1	24,8	38,3
'65....	83,2	47,3	35,9	'57....	59,8	24,8	35,0

"The details of this table will repay careful examination. Last year, 1871, was the most prosperous in the whole twenty-six. The divisible result was 61 millions sterling—or 10 millions more than in 1872 or 1870—and 10 millions more than in the 'great year' 1860. The period since 1865 compares very favourably with even the pre-war years 1857-60.

"In the autumn there was a sharp difficulty in the money market, arising, as usual, from the depletion of the reserve of the banking department—the tardy efforts of the Bank to protect it by timely elevation of the rate of discount—and the rapid and severe measures resorted to when the alarm was really raised. The rate ran up from  $3\frac{1}{2}$  in the middle of September, to 6 per cent. by the 9th October, and finally to 7 per cent. on the 13th November—falling to 5 by the middle of December. In August the banking reserve was 12 millions, and the rate  $3\frac{1}{2}$ . It had fallen to about  $10\frac{1}{2}$  millions before the rate was raised to 4, and it fell continuously to under 8 millions, while the rate was being carried by quick advances to 6 per cent., and it did not recover materially till the rate was made 7 per cent. But while these were the minimum rates, the directors did not hesitate to charge special rates on large classes of bills. The chief immediate cause of the pressure was the demand of the German Government for gold bullion in the London market for the purposes of their coinage. They obtained the command of this bullion in two ways—first, because they had been accumulating in London in the hands of certain joint stock banks and bill brokers very large cash deposits provided by the collection on German account of bills remitted from France for the

ransom ; and second, because they held, by means of agents and correspondents in London, a considerable amount of similar bills maturing from week to week, and with the proceeds of these bills they were able to purchase bullion as it arrived, and if it did not arrive, to draw on the reserve in the Bank of England.

“ The second immediate cause was the occurrence of the usual autumn drain of gold coin for purely *internal* purposes—that is to say, for the payment of harvest wages, for travelling funds for tourists, and last year to enable manufacturers and others to pay in coin the greatly advanced wages established in nearly all trades.

“ The presence of the German and French money in London to the amount of several millions—perhaps seven or eight—had been notorious for months, and it was also notorious that it would be speedily taken away. The occurrence of the internal autumn drain and the transport at the same season of gold coin to Scotland and Ireland under the Act of 1845, are also facts as well known as the succession of summer and winter. It is also well known that as it has pleased Mr. Lowe to collect all the income tax and assessed taxes early in the year—when the Government account is consequently overflowing, with the reverse result, of course, of being deficient in the autumn—so it generally happens that the Bank has, as in 1871, to find money for the October dividends at the very time when it is pressed upon by the merchants.

“ It is the disgrace and opprobrium of our banking system with its divided reserve that we go on year by year virtually ignoring these plain facts, and, by the sheer inelasticity of our arrangements, exposing the trade of the country to the greatest peril. In October and November last, while the banking reserve was vanishing away, there remained of course a steady 12 or 13 millions in the issue department. The pressure was for a week or ten days very severe, and if a few failures had then occurred to excite distrust, a panic would most certainly have ensued, and the Act of 1844 would have been again suspended. The loss and suffering and the derangement of trade were very great. The discount companies (see Appendix M) especially were prejudiced by the rapid rise of the rates ; and the countermanding of mercantile orders and the curtailment of transactions were carried to great lengths.

“ So long as the present system is maintained there is no security whatever against the occurrence of these periods of pressure every autumn. Indeed they are the logical and almost necessary consequence of the system itself, and if they do not arise it is because some happy accident is forthcoming to turn aside the prepared event.

“ The sensible course is to appoint a commission of competent

men to collect evidence, to investigate altered circumstances, and to report the changes which should be made.

" The following curious Table (IX) see *passim*, gives the figures of the *internal* efflux and influx of gold coin from and to the Bank of England for the last five years.

(IX).—*Efflux and Influx of Gold Coin for Internal Purposes, from and into Bank of England, in the Autumn and Spring of each Year 1868-72, as Compiled by Mr. John Newton (see passim).*

1	2	3	4	5	6	7	8
Efflux.				Influx.			
Weeks.	Ended.	Total.	Per Week.	Weeks.	Ended.	Total.	Per Week.
No.		£	£	No.		£	£
20	13 Nov., 1872	4,495,000	225,000	—	—	—	—
19	8 „ '71	4,674,000	245,000	19	21 Mch., 1872	1,199,000	63,000
20	16 „ '70	3,740,000	187,000	18	22 „ '71	1,044,000	58,000
19	10 „ '69	2,806,000	150,000	19	23 „ '70	2,043,000	107,000
20	11 „ '68	4,000,000	200,000	19	24 „ '69	787,000	41,000

*Note.*—To be read thus: During the nineteen weeks in the autumn of 1871, ended 8th November, 1871, the *efflux* of gold coin from Bank of England for purposes of *internal* use and circulation was 4,674,000*l.*, or 245,000*l.* per week. And the *influx*, or reverse current, in the following winter and spring, or during the nineteen weeks ended 21st March, 1872, was 1,199,000*l.*, or 63,000*l.* per week.

" It will be seen from the above that the tendency in the volume of efflux is to increase year by year—and that as a rule the influx brings back only about half the out-current—justifying the presumption that the amount of gold coin in circulation has been steadily increasing of late years by about 2 millions a-year. The high wages and high prices are quite consistent with such a result; and it is further corroborated by the sustained cost upon the Mint for increasing supplies of silver coin.

" The next Table (X) continues the facts of last year regarding the autumn increase of the country circulation, both in England, Scotland, and Ireland—and in the two latter countries the compulsory increase in the bank reserves under these clauses of the Act of 1845, which compel the banks to hold gold equal to the whole excess of their circulation beyond the fixed limit.

(X).—*Bank Note Circulation, August—December, 1872, of (1) Private and Joint Stock Banks of England and Wales; (2) of Scotland; (3) of Ireland; (4) Bank of England; (5) with Amount of Gold Held by Scotch and Irish Banks (per Cent. of 1845) as Cover for Increased Circulation.*

[0,000's omitted.]

1 Four Weeks Ended	2 England and Wales.			5 Scotch Banks.	6 Irish Banks.	7 Gold Held by			9 Total.
	Bank of England.	Private and Joint Stock Banks.	Total.			Scotch Banks.	Irish Banks.	Scotch Banks.	
	£	£	£	£	£	£	£	£	£
1872.									
10 Aug.	27,01	4,96	31,97	5,22	7,35	3,33	2,94	6,29	
7 Sept.	26,90	4,98	31,88	5,31	7,24	3,32	2,94	6,27	
5 Oct.	27,60	5,45	33,05	5,47	7,69	3,49	3,11	6,60	
2 Nov.	26,30	5,22	31,52	6,62	8,29	3,60	3,37	7,97	
30 "	25,00	5,04	30,04	6,21	8,01	4,11	3,44	7,65	
28 Dec.	25,40	5,00	30,40	6,63	7,62	3,83	3,20	7,30	

" The increase of gold reserves here shown is nearly  $1\frac{3}{4}$  millions (say 8 against  $6\frac{1}{4}$ ) in November, as compared with August (1872), and is an abstraction of gold from the Bank of England wholly foolish and useless.

" The following Table (XI) gives the usual summarised view of the rates of discount prevailing over Europe in 1872, and four preceding years:—

(XI).—*European Rates of Discount, 1868-72. Average Annual Rates per Cent. per Annum, at Places as under for First Class Bills, being a Summary of Appendix (G).*

Places.	1872.		1871.		1870.		1869.		1868.	
	Prin- cipal Bank.	Open Market.								
London .....	4 $\frac{1}{2}$	4 $\frac{1}{4}$	3	2 $\frac{3}{4}$	3 $\frac{1}{4}$	3	3 $\frac{1}{2}$	3	2 $\frac{1}{16}$	1 $\frac{3}{4}$
Paris .....	5 $\frac{1}{4}$	4 $\frac{1}{2}$	6	—	—	—	2 $\frac{1}{2}$	2 $\frac{1}{4}$	2 $\frac{1}{16}$	1 $\frac{3}{4}$
Frankfort ....	4 $\frac{1}{2}$	4	3 $\frac{3}{4}$	3 $\frac{1}{2}$	—	—	3	2 $\frac{1}{2}$	2 $\frac{3}{4}$	1 $\frac{3}{4}$
Amsterdam ....	3 $\frac{1}{2}$	3	3 $\frac{1}{4}$	3 $\frac{1}{8}$	—	4 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{4}$	2 $\frac{5}{8}$
Hamburg ....	3 $\frac{1}{2}$	3	4	3	—	3 $\frac{1}{4}$	—	2 $\frac{3}{4}$	—	1 $\frac{1}{2}$
Brussels .....	4	4	3 $\frac{1}{2}$	3 $\frac{1}{8}$	—	—	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{7}{8}$	2 $\frac{1}{2}$
Berlin .....	4 $\frac{1}{2}$	4	4 $\frac{1}{2}$	3 $\frac{3}{4}$	—	4 $\frac{1}{2}$	4 $\frac{1}{4}$	3 $\frac{1}{4}$	4	2 $\frac{1}{2}$
Vienna.....	6	5 $\frac{3}{4}$	5 $\frac{3}{4}$	5 $\frac{1}{2}$	—	5 $\frac{1}{2}$	4 $\frac{3}{4}$	4 $\frac{3}{8}$	4	4
Petersburg ....	6 $\frac{1}{2}$	6 $\frac{1}{2}$	7	6 $\frac{1}{2}$	—	5 $\frac{3}{4}$	6 $\frac{3}{8}$	6 $\frac{1}{8}$	7	7 $\frac{1}{2}$
Turin .....	—	—	6	—	—	—	5	5	5	—
Madrid .....	—	—	5	—	—	—	5 $\frac{1}{2}$	5	5 $\frac{1}{2}$	—

" We are able this year (in Appendix Ea) to present statements of the weekly returns (since May, 1872) of the official banks at Berlin, Vienna, Hamburg, and Brussels—besides the usual figures relating to the Bank of France. The following Table (XII) brings into a smaller compass the details given in the Appendix:—

(XII).—*Leading Foreign Banks. June, 1872, March, 1873. Circulation and Bullion Reserved at Dates as under, being Summary of Appendices (E and Ea) in Million £.*

[00,000's omitted, thus 91,3 = 91,300,000l.]

Dates.	Bank of France.		Bank of Prussia.		Bank of Austria.		Bank of Belgium.		Bank of Hamburg.	
	Cash.	Bullion.	Cash.	Bullion.	Cash.	Bullion.	Cash.	Bullion.	Cash.	Bullion.
	Mln. £	Mln. £	Mln. £	Mln. £	Mln. £	Mln. £	Mln. £	Mln. £	Mln. £	Mln. £
1872-73										
1st June	91,3	29,1	34,9	26,7	29,1	11,9	9,2	4,4	—	1,5
1st July	94,2	30,0	38,6	26,1	30,2	12,0	9,5	5,0	—	1,4
1st Aug.	93,1	30,3	37,0	25,7	30,4	12,4	9,6	5,0	—	1,8
1st Sept.	95,2	30,1	37,9	26,4	31,3	12,6	9,6	5,4	—	2,9
1st Oct.	99,5	31,5	41,0	24,7	31,8	13,5	9,9	4,7	—	4,5
1st Nov.	103,7	31,6	42,7	25,1	32,7	14,6	10,4	4,2	—	4,4
1st Dec.	105,8	31,7	43,5	26,4	32,3	14,5	10,6	4,5	—	2,9
1st Jan.	111,5	31,7	45,5	27,6	32,5	14,3	11,7	4,7	—	2,6
1st Feb.	113,4	31,6	43,3	28,2	31,8	14,3	12,4	4,8	—	2,5

*Note.*—In Paris, through 1872, the price of gold per mille has been 9 to 10 per cent.; in Austria, 7 to 8 per cent.; in Petersburg, 15 to 16 per cent.; in Italy, 9 to 10 per cent.

" The increase in the circulation of the Bank of France is 22 millions sterling (or nearly 25 per cent.) since May last. The bullion reserve is steady at (say) 30 millions. The Bank of Prussia also shows an increase of about 10 millions (or 25 per cent.) in the circulation, and a cash reserve of 28 millions, and tending to a slow augmentation. The figures of the National Bank of Vienna are the least fluctuating in the group. In Belgium also, the circulation has increased about one-fourth. Taking the four banks as a whole, they exhibit the following results, comparing the extreme dates of the table:—

	Dates.	Circulation.		Bullion.
		Mln. £	Mln. £	
	1872.			
1st June .....		164		72
	1873.			
1st February .....		200		80
	Increase.....	36		12

" Except in Prussia and Belgium, cash payments are suspended all over the continent.

" The creation of banks, credit companies, discount companies, advance associations, and other institutions of credit has been carried in 1871 and 1872 to a most prodigious extent all over Germany, Austria, Italy,—and Berlin, Frankfort, and Vienna have become hotbeds for the concoction of adventures of this sort, many of them being clearly frauds, and still more defective in plan or management. Of course these concerns draw and redraw on each other, and by employing varying and ingenious devices, they no doubt succeed in keeping afloat over Europe a large mass of mere finance paper, behind which there is little or no substance. Any serious check in confidence would render this paper worthless, and a collapse would follow. So far there is not much 'finance paper' in England. Some of the foreign bills of that character appear here now and then, but they are avoided and disliked, and but a small amount is held by any English house of standing. The next panic on the continent will be accelerated by the abuse of this kind of credit.

" To what lengths 'financing' was carried in this country in 1865-66, the vigorous and remarkable judgment by Vice-Chancellor Malins in the case of the National Bank *v.* Sir Joseph McKenna and others (see Appendix V) will show in a striking manner. It is a merit almost peculiar to our own courts that when flagrant cases do come before them, they are laid bare to the bottom, and the real character of the actors described in language which prevents the possibility of any mistake.

" 1872 has not sustained the large and progressive dividends made by the railways of the United Kingdom in 1870-71. The total traffic as appears by the following Table (XIII), exhibits considerable increase, but when the accounts have been made up the dividends in only a few cases exceed for 1872 the division of 1871.

(XIII).—*Railways, United Kingdom, 1869-72, Receipts, Expenses, and Mileage.*

[0,000's omitted, thus 49,91 = 49,910,000.]

Year.	Total Receipts.		Expenses.		Length of Line Open.
	Amount.	Per Mile Open per Week.	Amount.	On Receipts.	
1872 .....	£ 49,91	£ 3,881	£ 23,96	48·6	14,854
'71 .....	46,17	3,178	23,16	47·3	14,700
'70 .....	43,12	2,909	21,71	48·2	14,610
'69 .....	41,02	2,898	20,78	48·7	14,144

"The very rapid rise in coal, iron, steel, and railway stores of all sorts, which occurred during the closing months of 1872, and became more decisive during January and February, 1873, produced a decided pause and reaction in the railway market, and led several of the lines to start a discussion on the necessity of applying to Parliament to sanction increased tables of fares.

"In the United States the railway mileage open has been doubled since 1865. In that year it was 35,000 miles, and is now 70,000—the increase being chiefly in Western and the Pacific States. In every region where society and Government are at all settled, railways are being pushed forward by all the resources which can be commanded.

"The *Railway News* of 1st March (1873) gives the following details relative to the effect of the increased cost of coal on the dividends of some of the leading English—basing its conclusions on the facts of the four half-years composing 1871 and 1872:—

"It is evident that in the case of some of the dividends they have not been what may be termed legitimate profits of the last half-year's working. The current half-year will be burdened with an accumulation of *repairs* from the previous half, in addition to the ordinary repairs, at the still advancing rates for materials incidental to the half-year. But probably the most serious matter in connection with the current half-year's working is the hand-to-mouth way in which the companies whose contracts have expired, are at the present time procuring the necessary supply of *coal*. It is not likely that any fresh contracts will be entered into by the companies so long as the present unsettled state of things continues, and, like private individuals, the companies are at the present time wholly at the mercy of the coalowners. Buying in the best market, they are still paying an enormous advance on old rates. How largely the *Great Northern* proprietors, as an instance, are likely to suffer from this cause, was made clear to them at the half-yearly meeting last week. Colonel Packe, the chairman, stated that the company consumes 5,000 tons a-week, for which they are now paying 18s. a ton against the old rate of 7s. 6d., an increase of 10s. 6d. a ton, or about 2,650*l.* per week. This is equal to 70,000*l.* in the half-year, and represents a dividend of over  $1\frac{1}{2}$  per cent. per annum on the ordinary stock of the company.

"With respect to the loss of dividend which has actually accrued, it appears that in the *first half* of 1872 the companies generally were affected to the extent of about one-eighth per cent. per annum. The *London and South-Western*, and *Manchester, Sheffield, and Lincoln* lost fully a quarter per cent. in the first half. But in the *December half-year* the average loss was about five-eighths per cent., varying from a quarter to nearly 1 per cent. The following shows the actual loss of dividend arising from the increased price of fuel for the December half-year on each of the lines:—

*Increased Cost of Fuel, Half-Year, December, 1872.*

	Rate per Cent. per Annum	
	s.	d.
North-Eastern.....	18	9
Great Western .....	15	6
Manchester, Sheffield, and Lincoln .....	15	6
Great Eastern .....	13	6
London, Brighton, and South Coast .....	13	-
Great Northern .....	11	6
Lancashire and Yorkshire.....	11	6
London and South-Western .....	11	-
Midland .....	10	6
Bristol and Exeter .....	10	-
London, Chatham, and Dover .....	10	-*
," and North-Western .....	5	6
South-Eastern.....	4	-

“ ‘ As the rates now (13th February) being paid are very much higher than the averages of the past half-year, from which these figures are derived, nothing could show more conclusively the terrible severity with which *the present state of the coal trade must be pressing on the railway companies.* They are very large consumers of coal, but they are unable, like other large consumers, to recoup themselves fully against the rise by increasing their charges in proportion. The small increase of rates throughout the country which took place last autumn, has partially enabled the companies to maintain satisfactory dividends, but it will be insufficient to meet the loss in the current half. Other means will have to be adopted to enable them to pay the same dividends next June as they paid in the first half of 1872. The *North-Eastern Company* lost nearly 1 per cent. of dividend last half-year from the one item of coal, and it is not too much to say, from present appearances, that all round the companies will lose not less than 1 per cent. from the same cause in the current half-year. Whatever means the companies have of counteracting the evil, must be at once applied.

“ ‘ A remedy which the companies have in their own hands—could jealousy and the insane competition which is far too general with them be set aside—is a reduction of the train service, as well in the number as in the speed of the trains. We have before pointed out the low standard of earning per train mile, and the vast sums that are annually lost in running what are nothing else than duplicate trains between competitive points. Could the service be reduced, and so regulated as to afford undue advantage to neither competing company, the standard rate of earnings per train mile would be at once raised. An effectual remedy, better than an increase of rates and fares—to which the public might not so readily submit—would be at once provided for the now greatly increased cost attending the working of the railways in all departments.’

\* On arbitration preference stock.

"Adverting to the latest traffic and expense of the Manchester and Sheffield Company, the writer says:—

"We regret to find our worst forebodings of the probable results of the working of the current half-year fully confirmed by the return of the *Sheffield Company* for the last two weeks. As we showed at the time, the result for the first five weeks of the half-year, after allowing for the two days' difference, was an increase of 4,000*l.* per week in the *working expenses*, but this was nearly compensated by the increased traffic. For the sixth and seventh week, however, the increase in the working expenses is 4,600*l.* per week, while the traffic increase is only 2,300*l.* per week. A continuance of such returns and rates of increase would mean simply the annihilation of the dividend for the present.

"The increase in the price of coal in the manufacturing districts goes on uninterruptedly, and iron goes higher and higher. Scotch pig iron has now reached 145*s.* per ton, its normal price being from 51*s.* to 55*s.*'

"The *Economist* of 1st March, 1873, stated as follows the increase of gross receipts of thirteen principal railways in the five half-years ending 31st December, 1872:—

Year.	Half-Years.	Increase.	Per Cent.
		£	
1870	Second or December .....	736,000	5·3
'71 {	First " June .....	912,000	6·8
	Second " December .....	1,339,000	9·2
'72 {	First " June .....	1,170,000	8·3
	Second " December .....	1,256,000	7·5

"The increased charges for passengers and goods in the second half 1872, greatly helped towards the 7·5 per cent. increase.

"The increase in *working expenses* in the December, 1872, half is beyond former experience, and amounts to 1,119,000*l.*, or only less by 137,000*l.* than the whole increase of receipts. The increase of working expenses has gradually gained on the increased traffic, and then surpassed it as follows:—

#### Thirteen Principal Railways.

Year.	Half-Years.	Traffic, Increase.	Working Expenses, Increase.
		Per cent.	Per cent.
1870	Second or December .....	5·3	4·7
'71 {	First " June .....	6·8	5·9
	Second " December .....	9·2	7·7
'72 {	First " June .....	8·3	11·4
	Second " December .....	7·5	14·0

"With results like these operating so powerfully and directly against the interests of the millions of persons interested in railway property, it is superfluous to say that an amount of intelligence, ingenuity, and energy, will be set to work to discover remedial measures such as was never before applied to the subject.

"In approaching the subject of the rapid and most extraordinary rise since the autumn of 1871 in the prices of nearly all commodities, but especially in the primary or 'instrumental' articles of coal and iron, it is desirable, above all things, to begin with a statement of the facts as observed by persons most likely to be well informed.

"We commence, therefore, with the following passage from the circular (*given passim*) of Messrs. W. Fallows and Co. of Liverpool, —a house of long standing and great experience:—

"The primary cause of this extraordinary change may be traced back to the *low range of prices* which prevailed between the *end of 1864 and the beginning of 1871*. This led to an increased consumption of iron, in consequence of *its use in many new forms until, steadily but surely*, it became manifest that the demand was in excess of the means of supply. This was first felt in the early part of 1870, but the outbreak of the Franco-Prussian war postponed its development till the midsummer of 1871, from which period dates that remarkable reaction which has been witnessed.

"The *labour question* had a most important influence on the *course* of prices, and its controlling power is manifestly too potent to be despised or omitted in any estimate of the condition and prospects of the trade. On the first indications of improvement, the men were prompt and urgent in their demands for increased wages, and these have been repeated time after time *until now the cost of production has been most seriously enhanced* by the advance in wages. *In no case has the advance been less than 50 per cent. (during the last eighteen months), whilst in the case of the Scotch colliers the increase has been from 4s. 6d. to 10s. per day, although towards the close of 1872 the masters gave notice of a reduction of 2s.* Puddlers in Staffordshire, who were paid 8s. 6d. per ton in July, 1871, obtained 12s. 6d. per ton during the latter half of 1872. *Ironstone, coal, and coke have all fully advanced double since 30th June, 1871,* and as it is estimated that five to six tons of coal and coke are used in the process of producing one ton of manufactured iron through all the stages from the raw material, it will be understood what a serious matter the 'coal question' has been to the iron trade. Taking all these elements into consideration, it is evident that these high prices are not so remunerative to manufacturers as is generally supposed.

"In illustration of the exceptional demand which has been experienced during the last two years, 1871-72, it may be noted that there has been a *diminution in the stocks* of pig iron in Scotland and Middlesborough between 30th December, 1870, and 30th

December, 1872, of 537,000 tons, and this, notwithstanding an increase of 164,000 tons in the production of these districts.

"The total exports have risen from 2,825,575 tons, valued at £24,038,390*l.* in 1870, to 3,388,622 tons, valued at £36,060,547*l.* in 1872, the increase in weight being almost entirely under the head of 'pig iron.'

"It is also remarkable that, notwithstanding the average price of Scotch pig iron during 1872 was over 100*s.*, the quantity taken for home and foreign consumption was 51,000 tons in excess of 1871, when the average price was 59*s.*'

"We see here the enormous increase of the export of 1872 over 1870, thus:—

	Tons.	Value.
		£
1872.....	3,388,000	36,000,000
'70.....	2,825,000	24,000,000
Increase .....	563,000	12,000,000

"We have also the fact of the low prices of iron, 1864-70, leading to its 'use in many new forms' and to the 'demand being in excess of the supply.' We find also that 'in no case has the advance of wages in 1871-72 been less than 50 per cent.'

"Another leading authority, Mr. C. E. Muller, of Middlesborough, in his circular (given *passim*) writes to the same effect:—

"1872 has been an epoch in the iron trade, full of surprises and perplexities. A long period of low prices, coupled with a continuous and rapid increase in the make of pig iron, had, up till 1871, gradually created a sort of disbelief in any great or permanent rise in prices. It was rather feared that the competition amongst makers to sell their production (already so very large), would tend to send prices the other way. Consumers in this country seemed to be of a similar opinion, and with few exceptions, had not bought beyond the quantity required to cover orders on their books. The sudden and decided rise which commenced in the beginning of October, 1871, created not a little sensation. Consumers and shippers got alarmed, the prices rapidly advanced under heavy purchases, and 1871 closed with No. 3 worth 68*s.* per ton. Makers now seemed to think the price a good one, and with two or three exceptions sold freely for 1872, some of them even disposing of large quantities for delivery in 1873 and 1874. During the first six months of 1872, merchants bought but sparingly, their fears being strengthened by the difficulties of the 'Alabama' question, and rumours of probable financial disturbances through payment of the French war indemnity. In spite of these things, however, the value of pig iron steadily advanced, and reached a price undreamed of by the wildest fancy. Germany, and to a small extent Belgium, were the only

countries which seemed to realise the situation. In former times, Germany seldom bought for long forward delivery, but from August, 1871, right on through 1872, the Germans were persistent buyers of iron, even for delivery over 1873. The export statistics will show that this iron was really wanted in Germany, where, since the close of the war, all branches of industry had experienced a development hitherto unknown in the annals of her trade. This demand seems not arrested yet. From what I have ascertained, I expect that our exports to that country in 1873 will be even larger than those of 1872.'

"Mr. Muller confirms Messrs. Fallows, and he adds the further specific fact that, at the close of 1871 and early in 1872, the Germans were the only buyers who seemed to realise the fact that the demand for iron was then largely in excess of the supply, and would remain so for some time.

"Mr. Muller gives the following table of exports from the northern rivers in support of this view:—

*Shipments of Iron, 1868-72, from the Tees, Tyne, Wear, and Hartlepool  
(in Tons).*

To	1872.	1871.	1870.	1869.	1868.
Germany, Holland, and Belgium	316,000	250,000	140,000	112,000	74,000
France .....	45,000	38,000	50,000	48,000	34,000
Spain, Italy .....	5,300	4,600	4,300	4,400	7,300
Sweden, Denmark, and Russia....	13,800	21,000	16,000	14,400	15,600
America .....	4,000	10,500	400	1,200	1,400
Other countries .....	3,000	700	1,800	1,800	3,400
	386,000	330,000	216,000	186,000	137,000

"We see here that the German demand in the north of England was in 1871 nearly double that of 1870, and in 1872 one-fourth in advance of 1871—the exports to some of the other countries showing much change.

"If we turn to the other side of the Atlantic, we find testimony the same in substance as is given at home.

"Messrs. Bigelow and Johnstone, of New York, in the circular (given *passim*), say:—

"The war in the United States had fostered, not only here, but in Europe, India, and particularly in Great Britain, a strongly speculative fever, engendering in its turn a hollow and miserably

false system of financing, culminating in great commercial distress in 1866. Prices fell to a low point, and capital, frightened from its usual channels, took refuge in the great monetary centres. Enterprises, involving large expenditures, languished or were abandoned ; the trade of the kingdom shrank, and the railroads feeling the diminished traffic, ceased to be popular as investments. This, in its turn, reacting on the iron manufacturers, *so depressed prices, that in 1867 and 1868 orders were taken more with a view to keep the hands together, than from any profit accruing*, and thus presenting no encouragement to embark in new enterprises of this kind. As time wore on and confidence returned, *assisted greatly by the general prosperity of the United States during the years succeeding the establishment of peace, prices began gradually to improve, with an increasing demand*, though so gradual that it was insufficient as a stimulus to any great increase in the production either here or in Europe ; capital seeming to prefer the more tempting fields of gold and silver mining, leaving iron, really the most valuable, comparatively neglected. *Meanwhile enterprises requiring an almost incalculable amount of iron were being set on foot and vigorously prosecuted*, apparently, however, without overstraining the capacity for production, and without inordinately advancing prices. It was then that the trade began to get glimpses of a state of prosperity to which it had long been a stranger ; but a severe check ensued in the outbreak of the Franco-German war, throwing everything into confusion, and causing a smart decline in prices, besides greatly curtailing consumption. Then followed the absorption of labour for service in the field, and consequently stoppage of works, such establishments as were not closed being drawn from the manufacture of peaceful to that of warlike materials.

*"We are justified in concluding that the demand has been natural and legitimate and not speculative.* How long this state of affairs will last is a problem not easy of solution. Without doubt we must to a certain extent experience that lessened consumption which is the usual concomitant of high prices, but in Great Britain elements have entered into the question that require delicate handling. The vast increase in the price of labour and fuel have raised the platform of costs away from old figures, and it will be a long, slow process to return to the former standards, if indeed it were possible or desirable so to do. *We do not, therefore, look for an early return to former prices, either of the raw material or manufactured iron.* That the ultimate effect on the iron industry of the United States will be good may well be conceded, though we by no means believe with many that the power of Great Britain as a competitor is permanently injured, but the future looks bright, and the daily extending purposes to which iron is necessary, justify us in saying, that with *wise legislation*, and the well-known enterprise of our people, there is no reason why the United States should not ere long occupy the proud position of the greatest iron-producing country in the world.'

" We have here in another quarter of the world the fact that, stimulated by the low prices of 1864-70, enterprises were set on

foot in the United States ‘requiring an almost incalculable amount of iron’—that these enterprises were kept back artificially by the Franco-German war of 1870-71 and burst out with all the greater strength on the final conclusion of peace in the autumn of 1871.

“ We are justified by this evidence in concluding :—

“ 1. That during the five years 1866-70, Europe was gradually recovering from the financial crisis and from the Prusso-Austrian war of the former year—that enterprise was largely restrained all over the continent by apprehensions of French aggression—and that consequently the range of the prices of iron and other commodities fell to a point which induced the preparation of large schemes of railway and other extension into which iron entered as a chief material.

“ 2. That capital during these five years tended to increase and to press into new channels of investment.

“ 3. That the Franco-German war of 1870-71 occurred just at the moment when enterprise was beginning to expand under these influences, and violently repressed them till its termination by the collapse of France early in 1871, and the consequent removal of the great source of distrust and disquiet.

“ 4. That the release from apprehension was felt, perhaps in the largest degree by the German and Austrian people, numbering some 80 millions, and aided by the French ransom and by the consolidation of the German States into one nationality, led to an outburst of enterprise in the centre and south-east of Europe beyond all example.

“ 5. That the enlarged demand for iron for continental and American account, came naturally first to this country as the cheapest, best, and most extensive producing region; and by its magnitude and suddenness speedily carried the requirements greatly beyond the means of supply, and led therefore to a complete revolution in wages and prices in the iron and coal industries.

“ 6. Lastly, that even the vastly increased production in this country and elsewhere, in 1872, has not yet overtaken the demand on the continent and United States and elsewhere.

“ Regarding the effects on this country of the coal and iron prices of 1872, and the wealth created by them, the evidence is startling in the highest degree, and we proceed to give examples.

“ Of the Scotch trade Mr. Muller says :—

“ ‘ In Scotland there has been a reduction in the make of about 70,000 tons compared with the previous year; the cause, as in our own locality, was the short supply of materials. A large stock in store at Glasgow, also in makers’ yards, enabled them to meet all demands, but that stock was drawn upon heavily (296,000 tons), and there now remain only 194,000 tons of a reserve. The Scottish

makers, who rarely sell much ahead, must have netted very handsome profits.'

"The following are the figures of exports, prices, and manufacture, 1869-72 and in 1856:—

*Scotch Pig and Malleable Iron, 1869-72, and in 1856.*

Shipments, &c.	1872.	1871.	1870.	1869.	1856.	
Total foreign.....	616,933	512,479	388,842	388,639	258,738	
Coastwise, and per } rail to England.... }	299,067	357,521	266,158	262,361	246,262	
Total shipments....	916,000	870,000	655,000	651,000	505,000	
Local consumption ....	470,000	465,000	506,000	447,000	325,000	
Total deliveries ....	1,386,000	1,335,000	1,161,000	1,098,000	830,000	
Computed make .....	1,090,000	1,160,000	1,206,000	1,150,000	820,000	
Stock, 31st December	194,000	490,000	665,000	620,000	120,000	
Furnaces in blast, } 31st December .... }	115	126	126	130	126	
Highest price .....	s. 137	d. —	s. 73	d. —	s. 61	d. 6
Lowest   ,   .....	72	6	51	6	49	10½
Average   ,   .....	101	10	59	—	54	4
Make of malleable } iron .....	223,377	200,131	199,353	206,960	125,000	
Average price of } bars, 31st Dec. .... }	12l. 5s.	8l.	7l. 10s.	7l.	9l.	

"We see here but little advance in the *local* consumption, but an increase in 1871-72 of nearly 50 per cent. in the shipments from Scotland. In like manner there is no increase in the number of furnaces, and consequently the stock at 31st December, 1872, was 60 per cent. less than at end of 1871.

"Mr. Muller describes as follows the trade, in 1872, of the Hematite district of Cumberland; of South Wales; and of Lancashire and the Midland counties:—

"The Cumberland (*Hematite*) district has been in a very prosperous state. During the year twelve new furnaces were blown in, and more are in course of erection. Hematite iron for the Bessemer process continues in active demand. Prices for No. 1 ranged last year from 4*l.* 10*s.* to 9*l.* per ton. These prices must bear a good margin of profit, even considering the current high rates for coke and ore. Last year, however, there was a large quantity of cheap iron delivered under old contracts, the system of selling forward being much in vogue in Cumberland also.

"South Wales had likewise a good share of last year's prosperity. Bars and rails, which were 8*l.* and 7*l.* 10*s.* per ton respectively at the end of 1871, reached 12*l.* 10*s.* and 12*l.* in the course of the year. Towards the close there was a temporary scarcity of orders, and the price fell to 9*l.* for bars, and 9*l.* 2*s.* 6*d.* for rails. Iron-masters booked orders at this, in order to keep their hands employed during the winter. They were obliged of course to give notice of a reduction in colliers' wages, hoping, with the advent of better prices, to be able to increase them again in March. The colliers, however, rather than submit, preferred the ruinous policy of a strike and the stoppage of all the works, throwing 50,000 men out of employment. The strike still continues.

"In Lancashire and the Midland counties the foundry trade was prosperous throughout the year. Forges were also kept busy till well into the autumn, when the effects of the dulness in Staffordshire began to be experienced. It was felt, however, that the lack of orders arose mainly through buyers withholding specifications in the hope of further reduction. That idea proved correct. Towards the close of December, large orders were booked at prices fully 30*s.* per ton above the average for the last quarter of 1871."

"The report of the Coal and Ironstone trades is even more remarkable:—

"The prices of coal and coke have been unprecedented. The demand was enormous, consequent on the great activity in the iron trade. Our collieries could have met this easily had the colliers continued to work as usual, but their restrictive policy kept supplies very short, and generally enhanced the price. Earning high wages, men were not willing to work more than three or four days a-week, and how a portion of them spent their leisure hours is sadly shown in the records of the local police courts. Prices in the north of England were as follows, delivered at consumers' works:—

	Steam Coals.	Coke.	
		s.	s.
In January, 1872 .....	9	16	
" Midsummer .....	18	33	
" December .....	20	40	

"The export trade was very good, but a large quantity of the coals shipped were on account of contracts made before the rise. It is very doubtful if shipments will be as heavy in 1873, should prices remain high. In South Wales, steam coals and coke realising 12*s.* 6*d.* and 14*s.* respectively in January last, rose rapidly, till in September 35*s.* and 45*s.* were reached. By November, prices had declined to 19*s.* for coals and 30*s.* for coke, but towards the close of the year improved to 21*s.* and 33*s.* respectively.

"Ironstone remained scarce during the whole of 1872. There are sufficient mines working to supply all requirements fully, but the miners worked just as badly as the colliers. We have abundance of stone, new mines are being opened out, but labour is the

great difficulty. The price ranged from 4*s.* 9*d.* to 7*s.* per ton for raw stone delivered at the furnaces.

“ ‘Cumberland hematite ore, which cost only 10*s.* per ton a few years ago, is now worth 31*s.* to 33*s.* This has led to the importation, on an extensive scale, of hematite ore from the north of Spain. Prices there ranged from 7*s.* to 10*s.* per ton according to the dispatch given at Bilbao. Many steamers and sailing vessels now find regular employment in this trade. Freights 16*s.* to 19*s.* per ton.’

“ The rise of prices and wages, and the prevalence of strikes has not been confined to this country. The iron and coal trades of France, Belgium, Germany, and Austria, have all felt the impetus; but to the end of 1872 to not quite the same extent as ourselves:—

“ ‘The reports from the chief iron and coal districts in Germany, Austria, Belgium, and France, speak of great activity in the mills and foundries in 1872, and indicate a good trade for 1873. There has been an increase everywhere, both in the make of pig iron and the output of coal. Wages have risen 25 per cent., but are still much less than in this country. In Westphalia and Silesia coals are still much below the price here. If the old proverb is to hold good, that the country which possesses the cheapest coal will reign supreme in industry, England will soon have some reason to feel alarmed at the high prices now existing.’—Muller’s *Circular*.

“ As regards the condition of the markets and the prospects of demand at the close of 1872, the authorities we have already quoted reason as follows: Mr. Muller, writing in December, 1872, says of the probabilities of 1873:—

“ ‘With coke at 38*s.* per ton, and ironstone at 7*s.*, the cost of pig iron is about 85*s.* per ton. It now remains to be seen to what extent dear iron will limit its use. Sooner or later we shall come to a severe contest with the competitors which are now being called into existence by our high prices for iron and coal. The restrictive policy of the men directly fosters this competition abroad. Old furnaces, which did not pay in former times, are hard at work, new ones are being erected, and new coalfields are being rapidly opened out. This competition will perhaps begin to be felt before six months are over. It is true that the demands of the men may for a time rule supreme, and that they may seriously affect prices by restricting the production of iron and coal, but it must not be overlooked that it is not the cost of production, but demand which in the end regulates the market price of iron. Masters have had much to complain of respecting the behaviour of the men. It is not so much a question of wages, but their unsteady working and their policy of restriction both in time and labour have not only reduced profits, but have caused much waste of material and inferior quality of produce. There is no doubt, however, that the financial position of the masters in this district has been much improved, and will be

so still further, because, with the present temper of the men, the practice of investing profits in extensions of works will be considerably modified. They will thus be in a better position to resist unreasonable demands, while the men, notwithstanding high wages, have not saved a penny, and will be perfectly helpless when a struggle does come.'

"No doubt every rise of price brings into the line of competition an increasing number of new producers. At the same time we must ask what is the *demand*? Is it urgent and effective?

"Upon this point a weekly paper (*Iron*) of great intelligence and excellent means of information summarises as follows an elaborate report on the still unsatisfied projects of Germany alone:—

"To sum up, we have the following figures:—For the Berlin Wetzlar Railway, 300 miles, 8 millions sterling; Moselle line, 110 miles, 3 millions; Hanau-Friedberg, 24 miles, three-quarters of a million; Godelheim-Northeim, 45 miles, 1 million; Härburg-Saltau-Hannover, 90 miles, 2 millions; Saarbrucken-Neunkirchen (Fischbachthal coal strata), 20 miles, half-a-million; Metropolitan line, 10 miles, three-quarters of a million; altogether, 620 miles, at  $15\frac{3}{4}$  millions sterling. To this must be added, for the enlargement of the station at Hanover, three-quarters of a million; for a similar purpose at Berlin, one-third of a million—making a total of nearly 17 millions. To make up the 20 millions sterling which we named at the beginning of this article, there are 2 millions sterling put down for increase of *rolling stock and for additional trucks*. About this demand we will just add a few words. The late war taught the lesson of traffic impeded and industry trammelled for want of means of conveyance. On the 4th December, 1871, and the 5th of March of the following year, the Government asked for  $4\frac{1}{4}$  million thalers in order to procure the necessary accommodation; the supply, however, was tardy. By the 1st of last October, only 84 locomotives, 60 passenger cars, and 2,469 trucks had been supplied; and 68 locomotives, 90 cars, and 1,035 trucks arrived by the 1st of January. *There remain 239 locomotives, 218 cars, and 2,041 trucks to be provided during 1873*, but it is urged that the sum above named is not adequate to the requirements of the service on Government lines, and must be increased to  $1\frac{1}{2}$  millions sterling.'

"We have here 620 miles of railway to cost over 18 millions sterling, and a mass of locomotive engines and rolling stock to cost several millions more.

"In Russia, Austria, Hungary, Turkey, Egypt, India, Australia, South America, United States, Canada, the same story of extension and expansion is reported, and always with the corollary that railways which render new countries accessible yield profits, direct and indirect, to some party or other, which baffle the modes of calculation in old countries, where every acre has been appropriated for centuries. In new countries a small network of railways may bring small results as compared with a large one, and it is certain that

every mile of railway laid down in such countries renders the success of the next mile more assured.

“ Messrs. Fallows and Co., writing at end of December, 1872, speak of the prospects of 1873 as follows:—

“ ‘The iron trade enters upon 1873 under circumstances which are remarkable and unprecedented. *Of coals there is no stock, and the supply is much restricted, while of pig iron the stock is not more than equal to one month's consumption.* The relations of capital and labour are in the highest degree unsatisfactory towards each other, and strikes in various quarters are now increasing the evils already resulting from shortened hours and irregular work. Stocks of manufactured iron are everywhere at the lowest, and though demand may be more or less checked by rapidly-increasing prices, there is no reason to doubt that a good business is in prospect, and that a full average of requirements must be met. Time alone can show whether the course of prices will be such as the last has exhibited. The same elements exist in equal, if not greater force. *Whatever may result from their development the tendency is steadily towards the maintenance of a much higher range of prices than prevailed prior to 1872.’*

“ The lapse of two months of 1873 enables us to test these forecasts in some degree by actual facts; and the following reports from the *Times* at the close of February (1873), will show so far (1) that the advance in the price of coal and iron has continued; (2) that the demand has become more urgent; (3) that wages and deficiency of labour are higher and more marked than two months ago.

“ ‘The coal question, with a rapid advance in rates since December, 1872, is attracting a large amount of attention in the north of England—more than ever it did before, because its effects are being felt over a wider area. Last year many of the manufacturers had long contracts for coals at very moderate prices; but after they ran out they could not be renewed, except at a great rise. In December last the tendency of the coal market was downwards, and there was a general impression that prices would become lower, hence manufacturers, in entering upon new engagements, did not sufficiently protect themselves by making contracts for coals at the pit, and with the price of coals rising upon them every week, there is an end to all speculation except among the great iron companies which have collieries of their own. Many firms will not give estimates, and will only take orders at open prices. Trade is, therefore not so good as it was a month ago, and, instead of showing increased vigour with the spring, it is feared that, in many of its branches, it may become dull.

“ ‘Manufacturers complain that their profits are cut away, and owners of steamers state that the earnings of the ships ‘go up the chimneys.’ It is thought, indeed, that if the price of bunker coals does not become lower, many steamers will be laid by. There was

a fall in the prices of household coal in London last week, the mild weather having checked the market. But manufacturing coals were in great demand in the north, and more unscreened coals were sent from the pits to the factories. Steam coals were in great request. Prices were rather upwards, bunker coals for steamers being particularly high in price. There was, however, a scarcity of ships. *The gas coal pits are very fully employed.*

“ ‘Prices are high in the open market; but a considerable proportion of the output had been sold previously under contract. *The pits, as a rule, are rapidly coming up to their full standard of work, eleven days a fortnight.* In the Durham coal district the collieries last week, as a rule, were going from ten and a-half to eleven days per fortnight. The ‘baff’ Saturday is being brought back to a full working day.

“ ‘On Saturday, 21st February, a deputation from the Northumberland Miners’ Union waited on the Steam Coal Owners’ Association at Newcastle-on-Tyne; Mr. John Henderson, M.P., occupied the chair. After a friendly discussion between the deputation and the coalowners, it was agreed by the masters to concede an advance of 18 per cent. to the hewers, making the total advance since the beginning of 1872, 50 per cent. The wages of putters and banksmen are to be increased 15 per cent., making in all 35 per cent. The new rates if accepted are to commence on the 3rd March. As regards mechanics, the coalowners decline to make any concession. These terms, it is thought, will be accepted by the body of the men.

“ ‘As in the Durham district, there is a considerable difference in the rate of wages earned by the men employed below and above ground. *A number of sailors and labouring men are going to work in the pits;* but, as a rule, it needs some training before men become hewers, as many north country pits are very fiery, and inexperienced hands might soon blow the pit up. The men employed at bank, not being trained hands, do not earn much higher wages than men of the same class employed in other occupations.’

“ And the following paragraphs relate to the collieries of Wigan and of North Staffordshire:—

“ ‘This day the colliers of Wigan and the adjacent mining districts of South-West Lancashire will make application to their employers for an advance of wages. The movement cannot be said to be unexpected, and probably the request of the men has its immediate cause in the increased prices asked by the coalmasters last week at Liverpool. The circular to be issued to-day says:—

“ ‘We, the miners in your employ, beg most heartily to thank you for the liberal manner in which you have met our former wishes and request for an increase of wages. But, at the same time, after due consideration of the present prosperous state of the coal trade, the higher cost of the necessities of life, &c., we think we are entitled to higher wages than we now receive; therefore we most respectfully solicit you for an advance of 15 per cent. on our present wages. We venture to hope that a satisfactory reply will be given to our solicitation. A deputation from your workmen will wait upon you on the 3rd of March, when a favourable reply will very greatly oblige your obedient servants,

“ ‘THE MINERS IN YOUR EMPLOY.’

“ ‘ The miners of North Staffordshire have made a demand upon their employers for an advance of 15 per cent. in wages. They urge, in the circular addressed to the masters, that while the selling price of coal has advanced from 80 to 100 per cent., wages have only gone up from 30 to 35 per cent. They ask for a conference in the event of the employers considering the demand unreasonable.’

“ The next statement refers to the Somerset and South Yorkshire coal field:—

“ ‘ Once more has coal gone up at the pits throughout the *Somerset coalfield*, and once more have the colliers received an advance in their wages. Coal rates have gone up 2s. 6d. per ton, and the coalowners, probably seeing that an agitation would be made, conceded the men, without being asked, an advance of 10 per cent. This makes the sixth advance received by the *Somerset colliers since the beginning of January, 1872*, the total rise being 70 per cent. These advances have not been cumulative, but have been calculated on the basis of the earnings previous to the first advance. The following figures will show the difference in the prices of coal now and a year since:—

Qualities.	January, 1872, per Ton.		January, 1873, per Ton.		
	s.	d.	s.	d.	
Best coal.....	13	4	24	2	
Seconds .....	11	8	23	4	
Thirds .....	8	4	20	10	
Small .....	2	6	11	-	

“ ‘ There exists an unprecedented scarcity of coal, and in order to recoup themselves for extra trouble and diminished sale, the merchants of the district have added a good percentage.

“ ‘ At the Council of the South Yorkshire Miners’ Association, which numbers upwards of 15,000 members, held at Barnsley yesterday, it was unanimously resolved that an advance of *wages to the extent of 20 per cent. should be asked for*, the first payment on that increased scale to be made on the 8th of March. It is expected that the request will be acceded to. At the same meeting a grant of 250*l.* was made to the miners on strike in South Wales.’

“ And the following paragraph from Nottingham shows the kind of popular clamour which is being excited by the sudden pressure of the coal famine:—

“ ‘ A great demonstration against the high price of coal was held at Nottingham last night. A procession was formed in Sneinton Market, and proceeded to the great market place, headed by a brass band and a banner, inscribed with the words ‘ Starvation — beware of coalowners at the next election;’ an empty fire-grate was also carried. In the great market square a monster meeting was held, 8,000 or 10,000 persons being present. Speeches were

delivered by several working men, and a resolution was unanimously passed denouncing the conduct of the coalowners as inhuman, and appealing to Parliament for a commission of inquiry into the causes of the present high prices of coal. The names of Mr. Charles Seely, M.P. for the borough, and Mr. S. Isaac, of Colwick Hall, both of whom are colliery proprietors, were received with groans and hisses.'

" It appears from these statements and other evidence that, speaking generally, there has been since January, 1872:—

" First. A rise over nearly the whole of this country in the price of coal used for iron working and manufacturing purposes of from 150 to 200 per cent.

" Second. A rise in the wages of colliers, and of a large class of iron workers of between 70 and 120 per cent.

" Third. That the cost of production of iron and some other manufactures has been rendered so dear and uncertain by these enhancements in Coal, Iron, and Wages, that contracts for extensive future delivery are being avoided by both buyers and sellers, and that an increasing number of producers are preferring to suspend business till the conditions of their trade becomes more amenable to experience and safe calculation.

" Fourth. That as witnessed at Nottingham, the rise in the price of coal is becoming especially burdensome to the working and poorer classes; and, combined with the rise in the price of other commodities, is already compelling on their part greater exertions—that is, steadier work and longer hours—in order to procure incomes equal to the increased cost of living.

" The natural and effective remedies therefore have already set in with great force, and every day will add to their range and power.

" In Appendix (Bb) in order to present, in the most specific form, a report on competent authority, of the progress of mechanical enterprise and invention in 1872 and probably in 1873, we reprint the usual annual survey from the 'Engineer,' a professional journal of the highest class, and from that review we here take the following passage:—

" ' It cannot be denied that enormous sums are wasted annually in doing work that need not be done at all. A treatise, and one most instructive and useful, might be written on expedients for reducing the cost of production; and we advise our young readers especially, never for a moment to lose sight of the fact that there are two ways of obtaining every result that can possibly be required by the mechanical engineer. One is cheap, the other is dear; the mechanical result is in the end the same. In the reorganisation of shops, and in the invention of special machine tools, there is an ample field for the operations of the mechanical engineer; and we

have no doubt but that it is in this direction, and in this chiefly, that the current of engineering thought will principally run during the present year 1873. Nothing can alter the position, except the starting up of another demand for machinery sufficiently great and exhaustive once more to tax the energies of every mechanical engineer in the kingdom, and we believe that such a demand is not likely to arise during 1873. That large sales will be effected, and that trade will be even exceptionally good, we see no reason to doubt; but it will not be so good as to deprive the capitalist at once of the will and the power to improve on his existing system of construction.

“ ‘ Improvements in machine tools and in methods of executing work, although they exert the most powerful claim on the attention of mechanical engineers, do not and must not wholly engross it. To the makers of steam engines and machinery of all kinds it is rapidly becoming a matter almost of life and death to be in a position to deal on favourable terms with the originators and projectors of strikes, but the public at large do not care quite so much for these things. If a steam engine can be had—other things being equal—more cheaply from France or Prussia than it can be had in England, the purchaser will go to Prussia or France for it. Therefore the English engine builder must put himself in a position to supply the demand more cheaply and better than his continental rivals; and, as we have stated, his only hope of doing this at present lies in dispensing as far as possible with manual labour. That is a matter, however, which only concerns the public indirectly. There is another question of much more importance to those whose demands the mechanical engineer supplies. We mean cheap motive power. The enormous rise in the price of coal has stimulated the demand for economical steam engines to an unprecedented extent. We have often pointed out that when fuel is cheap, it is bad economy to attempt to save it by the adoption of complex machinery; but when it is a fact that 19s. a ton are paid for poor dead slack in London—a fuel so bad that it was once, and that not long ago, scarcely saleable at any price, and was for years considered dear at much less than half its present cost—it will be seen that economy in the use of steam becomes a matter of vital importance.’

“ This language is emphatic enough. In 1872 producers were all too busy to attend to invention and economy, but in 1873 invention and economy can alone save them from approximate ruin, and therefore invention and economy in this crisis, as in all former crises of the same sort, will not fail to do their work.

“ They have already done a good deal in confining the demand for land and marine steam engines to the latest and most effective designs. Thus the same authority says:—

“ ‘ So largely is the demand for economical steam engines increasing, that there is now by comparison but a poor sale for the cheap types of engine which once satisfied the requirements of most people. This is specially true of the marine engine trade. The

sale of compound engines working with high-pressure steam has grown to enormous proportions. After many vicissitudes of design and construction, the compound engine has settled down to the least objectionable type it can assume, a pair of inverted cylinders high and low pressure standing over a right-angled crank shaft, and fitted with an intermediate receiver, being now almost universally employed. There is little more complication in such a design than in an ordinary two-cylinder engine. Whether compound or not, however, the steam engine constitutes a most wasteful apparatus for utilising the work developed by combustion. We gave a numerical example of this waste in our last impression, which we need not reproduce here.

“ ‘The demand for a cheaper motive power is sure to stimulate invention. What direction is invention likely to take? As regards the steam engine, something remains to be done. No one dreams of using a non-condensing engine when great economy is required. But the condenser is by no means all clear gain. We have times and again pointed out the evil wrought by its frigorific influence. Who can step in to arrest this? The great want is a non-conducting cylinder. Provided with this, we might set the condenser at defiance.’

“ And the next passage points to the vigorous pursuit of inventors in search of new motive agencies:—

“ ‘After everything has been done, however, with the steam engine of which it is capable, in either theory or practice, it must remain, as we have said, a most wasteful expedient for producing power. We must search in other directions for the means of obtaining greater economy. A scheme which has attracted some attention in the United States, contemplates the use of a binary vapour engine, that is, one in which the volatile fluid bi-sulphide of carbon is converted into vapour by the heat of the exhaust steam and used to actuate a second piston. Theoretically there is a certain advantage to be gained by the adoption of this expedient. Practically it can hardly succeed; bi-sulphide of carbon has an absolute intolerable smell, and it is a deadly poison. The smallest leakage of the pipes would, for example, render a house or a ship almost, if not quite, uninhabitable. Ether has also been proposed, and was tested with a certain measure of success years ago by Du Tremblay; but its cost is great; its vapour inflames readily, and it is almost impossible to prevent leakage, as ether vapour will pass joints with the greatest facility which are quite steam-tight. The prospect of success attending the development of the binary vapour system is very small, we fear, though those who labour to introduce it have our very best wishes for their immediate success.’

“ It is scarcely necessary to discuss the hasty suggestions which have been made for the interference of the Government in some form to regulate—that is to say to moderate and restrain—the price of coal. The answer of the Government (February, 1873) was the only possible one, namely, that while they could assent to

Mr. Mundella's motion for a select committee to collect information and opinions, they declined to appoint any royal commission or undertake any executive action.

"The export of coals from this country was, in—

Year.	Tons.	Value.	Average per Ton.
		£	s.
1871.....	12,700,000	6,200,000	10
'72.....	13,200,000	10,400,000	16

"And these figures have led to several suggestions of a re-imposition of the export duty adopted by Sir Robert Peel as part of his financial scheme of 1842—the rates being 4*s.* per ton on large, and 2*s.* on small coal. The first and obvious reply to this suggestion is, that the export is curing itself, inasmuch as a rise of 8 per cent. in the quantity has already led to a rise of more than 50 per cent. in the price. But whether an export may or may not be expedient, the stipulations in several existing commercial treaties render such a duty impossible for several years. Mr. Gladstone said in reply to an inquiry, 'that under the French Treaty of 1860, which, however, expires in March, 1873, we cannot place an export duty on coal. But there is a Treaty of 1865 with the Zollverein, expiring in 1877, which contains a similar condition; and the new treaty with France will, if it takes effect, give that country the favoured-nation clause, and therefore place them on the same footing as the Zollverein. There is also a treaty with Austria entitling that country for the next three or four years to the same exemption.'

"As we have already said, we regard as erroneous and unfortunate, on general grounds of policy, all stipulations like these which restrain the most complete freedom of internal financial arrangement.

"We have now gone through the evidence illustrative of the very extraordinary state of things during 1872, and prevailing at the close of the second month of 1873, and we arrive at the following conclusions:—

"1. That the demand for iron and its manufacture, which became first manifest in the autumn of 1871, and continued to increase through 1872, and so far in 1873 exhibits no symptoms of decline, was a real and *bonâ fide* demand arising in the largest degree in Central and Eastern Europe and in the United States of America, for the accomplishment of schemes of railway extension rendered practicable, and in the majority of cases, profitable, by the

increase of wealth, enterprise, and invention—the removal of political disquietude—and the reform and improvement of the laws affecting industry and trade.

“ 2. That the demand coming suddenly on two manufactures like coal and iron, the produce of which does not admit of rapid expansion, has for a time given to the capitalists and workpeople already in the trade, a species of monopoly advantage, and hence the violent and extreme advance in prices and wages.

“ 3. That this monopoly advantage cannot be of long continuance (1) because new producers will enter the trade, and have already done so in great numbers, and so reduce prices; (2) because high prices will stimulate inventions and compel economy; (3) because so long as the law effectually secures freedom of contract between employers and workpeople, the poorer labourers will be compelled by the increased cost of living to seek better employments by means of greater exertions and steady conduct.

“ 4. That when the exaggeration and excitement of the present time have passed away, there will still remain to the regions affected by them, the solid benefits arising from the achievement of vast public works and private enterprises, all directed, and most of them eminently fitted, to render cheaper, easier, more certain, and more expeditious the production and distribution of commodities useful and desirable for every purpose of civilised life.

“ The following is the usual table showing the *percentage* variation of prices at 1st January, 1873, as compared with same date a year before (1st January, 1872)—with 1st January, 1867, when everything was depressed by the panic of 1866—with 1st January, 1864, when the prosperity years were in full swing—and with 1st July, 1857, the period when prices had attained almost their maximum, just previous to the collapse of October of that year:—

(XV).—*Wholesale Prices in London. Comparison of 1st January, 1873, with Three Former Dates, stating in approximate Percentages the Degree in which the Prices of 1st January, 1872, were Higher or Lower than the Prices brought into Comparison, see Appendix (C).*

Articles.	1		2		3		4		5		6		7		8		9	
			Higher		Lower				Higher		Lower				Higher		Lower	
			Than 1st January, 1872.				Than 1st January, 1867.				Than 1st January, 1864.				Than 1st July, 1857.			
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Coffee .....	17	—	—	17	—	—	15	—	—	—	13	—	—	—	—	—	—	—
Sugar .....	—	11	—	12	—	—	—	—	—	—	13	—	—	—	45	—	—	—
Tea .....	5	—	—	—	—	—	—	—	—	—	10	—	—	—	30	—	—	—
Wheat .....	5	—	—	—	—	9	—	30	—	—	—	—	—	—	—	—	14	—
Butchers' meat .....	9	—	—	17	—	—	25	—	—	—	40	—	—	—	—	—	—	—
Indigo .....	5	—	—	17	—	—	37	—	—	—	40	—	—	—	—	—	—	—
Oils .....	—	5	—	—	—	20	—	—	—	—	10	—	—	—	17	—	—	—
Timber .....	10	—	—	32	—	—	—	—	—	20	—	—	—	24	—	—	—	—
Tallow .....	—	15	—	—	—	8	—	6	—	—	—	—	—	—	50	—	—	—
Leather .....	8	—	—	12	—	—	6	—	—	—	—	—	—	—	3	—	—	—
Copper .....	2	—	—	7	—	—	—	—	—	—	15	—	—	—	25	—	—	—
Iron .....	42	—	—	60	—	—	35	—	—	—	16	—	—	—	—	—	—	—
Lead .....	15	—	—	8	—	—	—	—	—	—	—	—	—	—	16	—	—	—
Tin .....	—	3	—	80	—	—	30	—	—	—	3	—	—	—	—	—	—	—
Cotton .....	5	—	—	—	—	33	—	—	—	60	—	—	—	10	—	—	—	—
Flax and hemp .....	3	—	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—
Silk .....	—	—	—	—	—	7	—	25	—	—	—	—	—	—	15	—	—	—
Wool .....	20	—	—	7	—	—	—	—	—	—	—	—	—	5	—	—	—	—
Tobacco .....	12	—	—	—	—	—	—	—	—	70	—	—	—	—	5	—	—	—
Cotton cloth .....	—	—	—	—	—	30	—	—	—	60	—	—	—	10	—	—	—	—
Bank Note circulation of Great Britain }	—	—	—	12	—	—	20	—	—	—	20	—	—	—	—	—	—	—

*Note.—This table is deduced from the details given in Appendix (C), and is read thus:—On 1st January, 1873, coffee was 17 per cent. higher than at 1st January, 1872; 17 per cent. higher than at 1st January, 1867; 15 per cent. higher than at 1st January, 1864; and 13 per cent. higher than at 1st July, 1857; and so of the other articles.*

“ As compared with the close of 1872, prices are generally higher, but sugar, tallow, oils, and tea are lower. Present prices are naturally much higher than just after the panic of 1866. But when we compare 1st January, 1864, with the present time, we find almost as many instances of decline as of increase; and this observation is still more true as regards the comparison with 1st July, 1857. The whole subject of these comparative prices is discussed in Appendix (A). ”

" In considering variations of prices, it is necessary to bear in mind the rapidity with which the demand for conveniences and luxuries increases in countries and regions which a few years ago were almost out of the reach of all extensive mercantile transactions.\*

" The following Table (XVI), compiled from the best available sources, affords some evidence of the development by exhibiting in pence sterling for the three years 1851, 1861, and 1871, the value per head of population at these dates, of the British exports of cotton, cloth, and yarn to the countries included in the table; and increasing expenditure on cotton clothing, reasonably indicates a power of increased expenditure on other articles of comfort and enjoyment.

(XVI).—*Cotton Piece Goods and Yarns, 1851-61-71. Value of Exports per Head of Population of the Countries as under, as the Three Years given (Ellison's Circular), Compiled from Official Sources.*

Exported to	Exports per Head, Value.			Exported to	Exports per Head, Value.		
	1871.	1861.	1851.		1871.	1861.	1851.
I.	d.	d.	d.	III.	d.	d.	d.
Russian .....	1·7	1·1	0·8	Africa, West Coast	73·8	55·8	30·8
Sweden .....	18·3	5·6	4·7	," South ,"	120·2	147·2	106·1
Denmark.....	26·3	15·2	12·2		194·0	203·0	136·9
Germany.....	62·3	41·1	33·5	IV.			
Belgium .....	29·7	11·2	11·2	British North }	58·6	50·1	68·7
France.....	14·1	4·5	1·0	America .....	32·1	11·7	20·5
Turkey .....	51·3	32·3	26·6	United States .....	16·9	10·3	7·6
	203·7	111·0	90·0	Mexico .....	74·8	75·6	69·1
II.				Brazils .....	82·9	57·0	17·3
Asia Minor....	20·8	17·2	5·0	Paraguay, &c. ....	265·3	204·7	183·2
India .....	16·7	12·2	7·6	V.			
China .....	3·9	2·1	1·0	Total South America	48·2	33·5	35·6
	41·4	31·5	13·6	Australia .....	121·0	192·0	188·0
				Total of world....	14·0	9·8	9·9

*Note.*—The table may be read thus:—In 1851, the value of the cotton manufactures exported by this country to Sweden were 4·7 pence sterling per head of the population of Sweden in that year, and had risen in 1871 to 18·3 pence per head of the population of Sweden in 1871, and so of the other cases.

" \* Take as an apt example the rapid growth of New South Wales, thus:—In 1841 the population of *New South Wales* was 149,669, the revenue 493,980*l.*, and trade and commerce 3,551,385*l.* In 1851, after the dismemberment of the

" We have here some striking indications of enlarged means of expenditure. For example, the population of the Russian empire have double their purchases of English cotton goods since 1851; in Sweden the increase is fourfold; in Germany it is double; in Turkey double; in India double; in Asia Minor the increase is five-fold; in China nearly fourfold; in Mexico double; and in Paraguay and the Upper Amazon nearly fivefold.

" But not merely has the consumption of cotton cloth increased in near and remote regions, but the ratio of absorption among the working classes of Europe of articles which a generation ago were luxuries of the middle classes, has also rapidly increased. For example:—

" ' An instructive article in a German newspaper makes known by carefully selected statistics, the *great increase* that has taken place of late years in most European countries in the consumption of articles of food and drink which our grandfathers regarded as luxuries. Of course the increase has been much greater in some articles than in others. In *Prussia* the yearly consumption of meat per head had advanced from 33 lbs. in 1806, to 40 lbs. in 1849; *brandy* had grown from 3 quarts to 8, and wine from three-quarters of a quart to 2 quarts. The increase in *sugar*, again, was from  $1\frac{1}{2}$  lb. to 7 lbs., and in *coffee* from two-thirds of a lb. to 4 lbs. These figures do not bring us to the latest times, but the increase has been even in a greater ratio during the years since 1849. Thus Kolb estimates the total consumption of *sugar* per head of the *population in the area of the Zollverein* for the year 1860 at 7.37 lbs., and in the year 1864 it had advanced to 9.23 lbs.

" ' The annual consumption of the population of *London* is given as follows:—In the year 1843: sugar, 16.54 lbs.; tea, 1.47 lb.; cocoa, 0.09 lb.; wine, 0.22 gallon; spirits, 0.87 gallon. In the year 1865: sugar, 41.17 lbs.; tea, 3.26 lbs.; cocoa, 1.14 lb.; wine, 0.40 gallon; spirits, 0.89 gallon. From these figures it appears that England bears the palm easily in all such matters. From the recent work of M. Block, *L'Europe Politique et Sociale*, it appears that the *sugar* consumption of *France* per head per year is 7.4 kilogrammes; that of *Prussia*, 3.75; *Austria*, 2.46; *Russia*, 1.2; *Holland*, 7.03; *Belgium*, 4.06; while *England* stands at 19.88 kilogrammes. It is the same with *tea*. *England* also uses about half as much *silk* as the whole of the rest of Europe.'—*Pall Mall Gazette*.

" These are a few samples of the evidence which abounds in all southern districts, her population had increased to 197,168, but the revenue and trade had suffered by the loss of territory—the revenue being only 406,056*l.*, and the trade 3,360,843*l.* In 1861, the next decade after the dismemberment of the northern territory, the population increased to 358,278, the revenue to 1,448,610*l.*, and the trade to 11,986,394*l.*; whilst in 1871 the population had reached 519,182, the revenue was 2,727,404*l.*, and the trade and commerce was valued at 20,854,540*l.* The increase during the last ten years has been wonderfully rapid."

lands, that under the influence of greater freedom, better and wiser laws, the ceaseless achievements of science, and the power conferred on individuals and States by educated intelligence, the commerce of the world is even now only on the threshold of the expansion which lies before it."

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The special subdivisions of the review are the following:—

- I.—Corn and Cattle Trades.
- II.—Colonial and Tropical Produce.
- III.—Wine Trade.
- IV.—Raw Materials.
- V.—Shipping and Freights.
- VI.—Cotton Trade.
- VII.—Linen Trade.
- VIII.—West Riding Woollen, Worsted, and other Trades.
- IX.—Railway Traffic (United Kingdom), 1872, and Six preceding Years, and Railway Markets, 1872.
- X.—The Money Markets in 1872.

The Special Reviews and Tables of the Appendix in the original are indicated by the following titles:—

- A.—Wholesale Prices of Commodities in London and Manchester: Average of Six Years, 1845-50: Selected Dates, 1851-71: and Monthly, 1872.
- B.—Foreign Exchanges, 1841-72.
- C.—Wholesale Prices, 1845-72: Proportionate Results.
- D.—Bank of England: Weekly Return.
- E.—Bank of France.
- Ea.—Banks of Prussia, Belgium, Austria, and Hamburg: May—December, 1872.
- F.—Imports of Gold and Silver, in Millions Sterling, into the United Kingdom, 1867-72.
- Fa.—Exports of Gold and Silver, in Millions Sterling, from the United Kingdom, 1867-72.
- G.—European Rates of Discount per Cent. per Annum, Three Years, 1872, 1871, and 1870.

- H.—Gold and Silver, 1851-72: Exports to Egypt and East, from United Kingdom, &c.
- I.—Prices of Grain: England and Wales: Calendar Year.
- J.—Principal Commercial and Financial Events of 1872.
- K.—Cases of Large Amounts of English Probate Duty, 1863-72.
- L.—London Joint Stock Banks: Half-Yearly Reports at 31st December, 1872, and the Results of the Two Entire Years 1871-72.
- M.—The London Discount Companies.
- N.—Changes in Mercantile Firms.
- O.—Ireland: Progress of Real Improvement.
- P.—Councils of Arbitration and Conciliation in the North of England: Proceedings in 1872.
- Q.—Taxation of the Working Classes, 1842-72.
- R.—Negotiations with France in the Summer and Autumn of 1872 for a New Treaty of Commerce in Continuation of the Cobden Treaty of January, 1860.
- S.—Produce and Resources of the Wheat and Grain Regions of California, Oregon, and the Pacific and Western States.
- T.—An Investigation of the Evidence Relating to the Supposed Depreciation of Gold since 1848.
- U.—Social and Economical Changes in Germany.
- V.—A Chapter of the “Financing” of 1866.
- W.—French Finances and Revenues, 1872.
- X.—Production and Supply: Present and Future: Double Standard in Holland: Proposed Resumption of Specie Payments in the United States.
- Y.—United States Debt, 1866-72: New York Clearing House, 1853-72: Immigration and United States.
- Z.—The Erie Railway: Restitution by Jay Gould.
- Aa.—Rainfall and Weather in 1872.
- Bb.—Engineering and Mechanical Progress and Invention in 1872.
- Cc.—Miscellaneous.

II.—*The Progress of Indian Finance.*

FROM the *Economist*:—

“ The usual debate on the Indian budget just before the close of the Session, served to bring out that financial affairs in India have become more satisfactory than is commonly supposed. They are not wholly what we could wish, for the cardinal difficulty of Indian finance—that of administering a civilised and necessarily expensive Government in a country which progresses with incredible slowness according to western notions—is not to be cured in a day. Still some progress is being made, and the scandal of successive deficits is at any rate being avoided. Comparison with former years has been made more difficult by the abolition of the income tax, and by the transfer of certain charges to the newly-created provincial budgets; but sufficient facts can be put together to show that affairs are moving in the right direction. We subjoin a few tables, which we hope will throw additional light on various points referred to in the debate.

“ 1. The most general figures are satisfactory. Omitting the totals of revenue and expenditure for the last two or three years, which happen to be no guide in consequence of the changes we have referred to, we find that the surpluses of the present period, as regards ordinary expenditure, are—

	£
1870-71 (actual) .....	1,483,000
'71-72 (,,) .....	3,124,000
'72-73 (regular estimate) .....	1,402,000
'73-74 (budget,,) .....	220,000
<hr/>	
Total .....	<u>5,229,000</u>

“ No doubt the least surplus of all, that estimated for the current year, is not much to be reckoned on, but for three years at least India has certainly had surpluses. The balance is on the right side of the account. As Mr. Grant Duff points out, the Indian Government is fairly entitled to set these surpluses against previous years of deficit. The important fact is that for a long period of years the ordinary expenses of Indian Government (including a large new expenditure on public works) have not added to the indebtedness of India.

“ 2. The best confirmation of the inference from the statement of surpluses is obtained by comparing the accounts of the debt itself. From Table IV, which we subjoin, it will be seen that between 1867-68 and 1871-72, an interval of four years, the annual interest paid on the Indian debt, both in India and in England, increased only from 5,733,000*l.* to 5,966,000*l.*, or about 234,000*l.* This represents an aggregate capital increase of between five and six millions only, a sum much below the expenditure on new public works, a portion of which must, therefore, have been paid out of revenue. Compared with other great countries, excepting England and the United States, the increase of debt is wonderfully small, no matter what the cause may be; but the cause is unquestionably the public works' expenditure, of which India has thus had the benefit at very little cost. India is certainly not in the condition of a country which is increasing its debt enormously for the sake of so-called public works which do not prove remunerative.

" And the position of India is even better than this. In the current year it will be seen from the table we refer to, the estimate of the annual charge for the Indian debt shows a reduction of 196,000*l.*, chiefly for the conversion of old debt, as specified in the table. The credit of the Indian Government is such that it is able to effect a saving by reborrowing at lower rates to pay off old loans. The net result of the financial management of India for a long period of years is an absolute non-increase of the charge for the debt. The new public works are thus a net gain to India, and the greatest pessimist we should imagine will not say that that gain is absolutely inappreciable.

" 3. The question then arises as to how the surpluses have been obtained, whether by augmentation of revenue, or by a diminution of expenditure. Both causes are found, in fact, to have contributed.

" As regards *expenditure*, we have already shown that there is no cause for dissatisfaction with one great branch, viz., the annual charge on the debt. The principal other branch, especially in an empire like India, is the military department, and here, too, the account is most creditable to the Indian Government. The military expenditure, it will be seen (Table III) has steadily fallen since 1869-70. In that year it amounted to 16,330,000*l.*; in 1872-73 it was 15,567,000*l.*—a diminution of 783,000*l.* The estimate for the current year is a few thousands more than in 1872-73, and it may fairly be assumed, from the strict control manifestly exercised, that, unless some unforeseen event happens, the estimate will not be exceeded. Whatever increase of expenditure there may have been in other branches, the Indian Government has obviously contributed to its surplus by a steady economy in the largest and most difficult spending department.

" There is another economy which Mr. Grant Duff refers to, as to which we are not quite sure there will finally be much cause for congratulation, though, for the present, matters are satisfactory and the Indian Government has the credit of anticipating what would happen. This is on account of the loss and gain by exchange in dealing with the railways. Up to 1869 there was a loss, the nature of which Mr. Grant Duff explained as follows in that year, accompanying his explanation with the prediction that thenceforward there would be a gain:—

" ' When the arrangements with the Indian railway companies were made, it was provided that for every rupee they paid in in India from their traffic receipts, they should be credited with 1*s.* 1*d.* in London, and for every 1*s.* 1*d.* they paid in in London to our account at the Bank of England, that is, for every 1*s.* 1*d.* of capital they raised, they should be credited with a rupee in India. A rupee is, however, at the usual rate of exchange, worth 2*s.* and not 1*s.* 1*d.*, and all accounts between the India Office and the Indian Governments are settled at that figure. It follows, therefore, that the companies lose 2*d.* on every rupee they pay in India, and gain 2*d.* on every 1*s.* 1*d.* they pay in England, and that as the one-and-tenpences they pay in in England are more numerous than the rupees they pay in in India, they gain and we lose a great deal in the course of the year. Ere long, however, I am happy to say, that the tables will be turned; they will pay in more rupees in India than one-and-tenpences here, and we, not they, will begin to be the winners in the game of exchange.'

" And this prediction, as we have stated, has come true. From the last table we subjoin, it will be seen that since 1869 the Indian Government has been increasingly in a better position than it would have been if the exchange of 2*s.* had been maintained.

	£
In 1869-70 it gained .....	40,000
„ '70-71 „ .....	132,000
„ '71-72 „ .....	210,000
„ '72-73 (regular estimate) .....	283,000

“ So far the arrangement has proved a beneficial one as compared with the old. The gain, however, it should be understood, is only relative, and the whole subject of the Indian exchanges is not a satisfactory one to consider in its bearing on Indian finance. The signs are that 1*s. 10d.* may itself be becoming too high a par of exchange for the rupee. The demonetisation of silver in Germany threatens a serious depreciation of silver throughout the world; and India, as a chief silver country, will be greatly affected. Should this be the case, the loss by exchange on the whole transactions of the Indian Government with England may become much more formidable than it is. The Government are entitled to credit for making so good an arrangement with the railways as they have done, but the cause of its answering so well is not altogether satisfactory when considered in relation to the general prospects of Indian finance.

“ As regards revenue, which is the other source to be looked to for an augmentation of surpluses, we fear that as yet the most that can be said is that the revenue increases very slowly. We ought not to expect a rapidly augmenting revenue in India, and should be moderately satisfied with the fact that the sources of revenue are not stationary or drying up. Mr. Grant Duff, we fear, makes somewhat too much of the facts. He states:—

“ ‘The land revenue has increased since 1868-69 by 594,166*l.*; the salt revenue has increased by 378,355*l.*; the opium revenue has increased by 800,494*l.*; the excise revenue has increased by 85,373*l.*; and all this increase has been natural, not the result of new taxes, except in so far as the total is swelled by an increase under salt, the duty on which was, during the viceroyalty of Lord Mayo, increased at Madras and Bombay by 5 annas a maund, say 7½*d.* on 82 lbs. That increase accounts for about 200,000*l.* There is no important decrease of revenue to be set against this increase of about 1,800,000*l.* per annum, or 1,600,000*l.*, if we put out of sight that part of the increase under salt to which I have just alluded.’

“ Thus in four branches an improvement is specified, but, unfortunately, the apparent improvement in each case can only be accepted with qualification, as far as any inference as to the growth of the taxable resources of the Indian people is concerned. Thus, as regards the land revenue, there is undoubtedly the increase specified since 1868-69, but, unfortunately, in that year the land revenue had *fallen* from a point previously reached. It is now 20,520,000*l.*, but in 1864 it was 20,303,000*l.*, and in 1866, 20,474,000*l.* Although, therefore, there is an increase in 1871-72 over 1868-69, the fact of steady progressive growth is not thereby established. We think a slow improvement can be shown over a long average of years, but more elaborate figures would be required to prove it than those which Mr. Grant Duff used.

“ As regards excise and salt, the qualifications are obvious. In excise the increase is trifling, and in salt it is due largely to an increase of rate, which is not what we think of when we speak of an augmenting revenue.

“ The only remaining item is opium, and that is perhaps satisfactory enough so far as the Indian exchequer is concerned. If the opium revenue does in fact increase from one year to another, it is a clear advantage to the Indian Government,

although it is not Hindoos but Chinese who pay the tax. The qualification is that the augmentation proves nothing as to the resources of the community of Indian taxpayers, on whom reliance must be placed for our financial reserve. Whatever opium may yield, Indian finance will not be wholly satisfactory until the taxable wealth of the native population is increased. India certainly does not pay much in taxation, as will be seen from Tables I and II, which we subjoin. \* The whole of the imperial revenue of India which can properly be called 'taxation' is only £2,520,000*l.*, and the local and provincial taxation is £2,283,000*l.* more, or about £6,000,000*l.* in all. This is only 3*s.* 7*d.* per head of the vast population, and considering that the larger part of it is in the nature of rent, it is almost literally the case that the people of India are hardly taxed at all. The misfortune, however, is that the people seem too poor to bear taxation, and that such wealth as there is in the country is, from the customs of the people, accessible only with difficulty to the taxpayers of a civilised Government. The wealth will increase and will probably with changing habits become more easily accessible, but the present difficulty, it need not be disguised, remains serious enough.

"Such appear to be the principal facts brought out by the last Indian debate. We think it a matter of the utmost importance that the financial administration of India has held its own so well during the last five years. The one unsatisfactory feature is that the revenue from native Indian sources does not increase so rapidly as to enable a progressive Government to spend what it would like on new improvements. But this is an essential difficulty which must be submitted to with patience until the past improvements tell. That these will do so in time it would be unreasonable to doubt."

I.—*Estimate of Taxation per Head throughout British India, 1871-72.*

	£	£
Land revenue .....	20,520,337	
Excise .....	2,369,109	
Assessed taxes.....	825,241	
Customs .....	2,575,990	
Salt .....	5,966,595	
Stamps .....	2,476,333	
	—	34,733,605

*Deduct—*

Refunds and allowances and assignments under treaties, and allowances to district and village officers .....	} 2,213,898
<hr/>	

	s. d.
Population, 184,586,786, per head .....	3 6 <i>1</i> <sub>4</sub>
Local and municipal taxation .....	£2,540,298
Provincial taxation, transferred to provincial services in addition to annual grant.....}	742,442
	3,282,740
Or, per head .....	— 4 <i>1</i> <sub>4</sub>

The above rates are obtained after assuming the rupee  
to be worth 2*s.*; taking its value at 1*s.* 1*d.*, the rate }  
would be one-sixteenth less, or.....

II.—*Statement of Local Taxation of India.*

<i>Taxes Raised under Local Funds—</i>	£	£
On lands .....	1,197,367	
,, houses .....	5,924	
,, assessed taxes .....	2,983	
,, octroi duties .....	2,722	
,, licences .....	20,098	
,, miscellaneous .....	2,831	
	—	1,231,925
<i>Minor Municipal Taxation—</i>	<i>£</i>	
Ajmere, &c. ....	4,930	
Oudh .....	38,235	
Central Provinces .....	52,100	
Burmah .....	22,775	
Bengal .....	83,029	
North-West Provinces .....	150,242	
Punjab .....	159,180	
Madras .....	76,693	
Bombay .....	108,604	
	—	695,788
<i>Presidency Towns—</i>		
Calcutta .....	250,000	
Madras .....	39,240	
Bombay .....	323,345	
	—	612,585
Total local and municipal taxation.....		1,308,373
		2,540,298

III.—*Statement showing Reduction of Military Expenditure since 1868.*

Year.	India.	England.	Total.	£			
				1868-69	'69-70	'70-71	'71-72
1868-69 .....	12,989,566	3,280,015	16,269,581				
'69-70 .....	12,828,750	3,500,989	16,329,739				
'70-71 .....	12,549,303	3,525,497	16,074,800				
'71-72 .....	12,036,098	3,642,014	15,678,112				
'72-73 regular estimate.....	12,024,900	3,521,659	15,546,559				
'73-74 budget .....	11,844,900	3,759,100	15,604,000				
Actual decrease since 1868-69 .....	—	—	591,469				
Estimated decrease since 1868-69 .....	—	—	665,581				

IV.—*Comparison of Interest on Debt of India in 1867-68 and 1871-72.*

Year.	India.	England.	Total.	£			
				1867-68	'71-72		
1867-68 .....	3,585,946	2,146,811	5,732,757				
'71-72 .....	3,529,263	2,437,036	5,966,299				
Increase .....	—	—	233,542				

caused by borrowing for expenditure on public works extraordinary.

	£
The estimate for 1873-74 is.....	5,770,000
Showing a decrease, as compared with 1871-72, of....	<u>196,299</u>

arising from the following measures:—

*In India—*

	£
In January, 1872, about 13,500,000 <i>l.</i> of the 5 per cent. loan of 1856-57 was converted into a new loan at 4½ per cent. for seven years, and subsequently 4 per cent., the remainder, about 2,750,000 <i>l.</i> , being converted into 4 per cent. securities for Government currency reserves, causing an immediate annual saving.....	93,698
After seven years of 161,198 <i>l.</i>	

	£
In June, 1872, 5 per cent. debentures, amounting to 3,791,946 <i>l.</i> were discharged—annual saving.....	18,959

*In England—*

	£
In August, 1873, 5 per cent. debentures 5,000,000 <i>l.</i> , 4 millions will be renewed at 4 per cent.—annual saving .....	40,000
One million will be paid off, and money probably raised at 4 per cent. .....	10,000
	<u>50,000</u>

exclusive of the redemption of the capital stock of the East India Company.

V.—Statement showing Loss and Gain by Exchange on Transactions with the Guaranteed Railway Companies.

Year.	Loss by Exchange in Adopting the Rate of Is. 10 <i>d.</i> the Rupee, as Compared with that of 2 <i>s.</i>	Gain by Exchange in Adopting the Rate of Is. 10 <i>d.</i> the Rupee, as Compared with that of 2 <i>s.</i>		
			£	£
1849-50 .....	—	—	—	780
'50-51 .....	—	—	—	3,623
'51-52 .....	13,091	—	—	—
'52-53 .....	21,819	—	—	—
'53-54 .....	37,162	—	—	—
'54-55 .....	59,845	—	—	—
'55-56 .....	111,750	—	—	—
'56-57 .....	147,361	—	—	—
'57-58 .....	177,262	—	—	—
'58-59 .....	303,874	—	—	—
'59-60 .....	429,233	—	—	—
1860-61 .....	469,759	—	—	—
'61-62 .....	420,123	—	—	—
'62-63 .....	317,785	—	—	—
'63-64 .....	241,234	—	—	—
'64-65 .....	146,048	—	—	—
'65-66 .....	50,506	—	—	—
'66-67 .....	111,681	—	—	—
'67-68 .....	101,877	—	—	—
'68-69 .....	20,733	—	—	—
'69-70 .....	—	—	—	40,031
1870-71 .....	—	—	—	131,867
'71-72 .....	—	—	—	209,676
'72-73 regular estimate .....	—	—	—	283,000

# REGISTRATION OF THE UNITED KINGDOM.

## No. I.—ENGLAND AND WALES.

**MARRIAGES—QUARTER ENDED MARCH, 1873.**

**BIRTHS AND DEATHS—QUARTER ENDED JUNE, 1873.**

**A.—Serial Table of MARRIAGES, BIRTHS, and DEATHS, returned in the Years 1873-67, and in the QUARTERS of those Years.**

*Calendar YEARS, 1873-67:—Numbers.*

Years .....	'73.	'72.	'71.	'70.	'69.	'68.	'67.
Marriages No.	—	200,937	190,112	181,655	176,970	176,962	179,154
Births.....,,	—	824,646	797,428	792,787	773,381	786,858	768,349
Deaths ....,,	—	492,065	514,879	515,329	494,828	480,622	471,073

*QUARTERS of each Calendar Year, 1873-67.*

**(I.) MARRIAGES:—Numbers.**

<i>Qrs. ended last day of</i>	'73.	'72.	'71.	'70.	'69.	'68.	'67.
March..... No.	41,209	40,557	36,305	36,455	37,752	36,696	36,441
June .....,,	—	50,197	48,831	46,720	43,202	45,364	45,589
September ..,	—	49,806	46,536	43,900	43,978	43,509	44,086
December ..,	—	60,377	58,440	54,580	52,038	51,393	53,038

**(II.) BIRTHS:—Numbers.**

<i>Qrs. ended last day of</i>	'73.	'72.	'71.	'70.	'69.	'68.	'67.
March..... No.	216,367	208,737	209,523	206,366	203,775	198,584	194,763
June .....,,	206,618	208,711	201,165	203,615	188,618	202,839	199,660
September ..,	—	201,105	193,271	192,521	190,394	192,583	190,782
December ..,	—	206,093	193,469	190,285	190,594	192,852	183,144

**(III.) DEATHS:—Numbers.**

<i>Qrs. ended last day of</i>	'73.	'72.	'71.	'70.	'69.	'68.	'67.
March..... No.	132,626	134,992	138,393	143,773	133,096	119,676	134,008
June .....,,	118,751	120,914	120,793	121,128	118,947	110,010	112,355
September ..,	—	118,786	121,332	124,297	114,644	130,482	108,513
December ..,	—	117,373	134,361	126,131	128,141	120,454	116,197

*Annual Rates of MARRIAGES, BIRTHS, and DEATHS, per 1,000 PERSONS  
LIVING in the Years 1873-67, and the QUARTERS of those Years.*

*Calendar YEARS, 1873-67:—General Ratios.*

YEARS.....	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
Estmtd. Popln. of England <i>in thousands</i> in middle of each Year....	23,356,	—	23,068,	22,783,	22,501,	22,223,	21,949,	21,678,
Persons Mar- ried .....	—	16·8	17·4	16·7	16·1	15·9	16·1	16·5
Births .....	—	35·3	35·7	35·0	35·2	34·8	35·8	35·4
Deaths.....	—	22·6	21·3	22·6	22·9	22·3	21·9	21·7

*QUARTERS of each Calendar Year, 1873-67.*

(I.) PERSONS MARRIED :—Ratio per 1,000.

Qrs. ended last day of	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
March .....	14·3	13·8	14·1	12·9	13·2	13·8	13·5	13·7
June.....	—	17·1	17·5	17·2	16·7	15·6	16·6	16·9
September .....	—	16·4	17·1	16·2	15·5	15·7	15·8	16·2
December .....	—	19·9	20·7	20·4	19·2	18·6	18·6	19·5

(II.) BIRTHS :—Ratio per 1,000.

Qrs. ended last day of	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
March .....	37·6	37·0	36·3	37·3	37·3	37·3	36·4	36·6
June.....	35·5	36·3	36·3	35·5	36·4	34·1	37·2	37·1
September .....	—	34·2	34·6	33·7	34·0	34·1	34·9	35·0
December .....	—	34·2	35·4	33·7	33·6	34·1	35·0	33·6

(III.) DEATHS :—Ratio per 1,000.

Qrs. ended last day of	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
March .....	23·0	25·2	23·5	24·7	26·0	24·4	21·9	25·2
June.....	20·4	21·8	21·0	21·3	21·6	21·5	20·2	20·9
September .....	—	21·4	20·4	21·1	22·0	21·5	23·7	19·9
December .....	—	22·2	20·2	23·4	22·3	22·9	21·8	21·3

B.—Comparative Table of CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE in each of the Nine QUARTERS ended June, 1873.

1 Quarters ending	2 Average Price of Consols (for Money).	3 Average Rate of Bank of England Discount.	4 Average Price of Wheat per Quarter in England and Wales.	5 Average Prices of Meat per lb. at the Metropolitan Meat Market (by the Carcase), with the Mean Prices.		7 Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	8 Pauperism.		10 Mean Tem- pera- ture.		
							Beef.				
							Mutton.				
1871				d. d. d.	d. d. d.	s. s. s.				°	
June 30	£ 93 $\frac{3}{8}$	2·5	s. d. 59 9	5 $\frac{1}{4}$ —7 $\frac{3}{4}$ 6 $\frac{1}{2}$	5 $\frac{1}{2}$ —8 $\frac{1}{2}$ 7	51—76 63 $\frac{1}{2}$	140,357	806,186	51·5		
Sept. 30	93 $\frac{3}{8}$	2·2	57 9	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	5 $\frac{3}{4}$ —9 7 $\frac{3}{8}$	60—77 68 $\frac{1}{2}$	132,067	769,764	61·3		
Dec. 31	93	4·2	56 3	5—7 $\frac{3}{4}$ 6 $\frac{3}{8}$	5 $\frac{1}{2}$ —8 $\frac{1}{4}$ 6 $\frac{7}{8}$	75—104 89 $\frac{1}{2}$	141,027	759,666	41·8		
1872											
Mar. 31	92 $\frac{4}{8}$	3·0	55 4	5—7 $\frac{1}{4}$ 6 $\frac{1}{8}$	5 $\frac{3}{4}$ —8 $\frac{1}{2}$ 7 $\frac{1}{8}$	80—120 100	149,599	776,793	43·6		
June 30	92 $\frac{7}{8}$	4·0	56 8	5 $\frac{1}{4}$ —7 $\frac{1}{2}$ 6 $\frac{3}{8}$	6—8 $\frac{3}{4}$ 7 $\frac{3}{8}$	124—150 137	134,412	724,463	52·8		
Sept. 30	92 $\frac{4}{8}$	3·5	58 11	5 $\frac{1}{4}$ —8 6 $\frac{5}{8}$	6 $\frac{1}{4}$ —9 $\frac{1}{4}$ 7 $\frac{3}{4}$	105—133 119	126,377	681,987	61·1		
Dec. 31	92 $\frac{2}{8}$	5·9	57 3	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	6—8 $\frac{1}{2}$ 7 $\frac{1}{4}$	153—187 170	138,648	675,598	45·3		
1873											
Mar. 31	92 $\frac{3}{8}$	3·9	55 10	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	6 $\frac{1}{4}$ —9 7 $\frac{5}{8}$	179—235 207	150,392	703,357	39·4		
June 30	93 $\frac{3}{8}$	5·2	56 5	6—8 $\frac{3}{4}$ 7 $\frac{3}{8}$	6 $\frac{3}{4}$ —9 $\frac{1}{2}$ 8 $\frac{1}{8}$	183—242 212 $\frac{1}{2}$	135,491	666,126	50·2		

C.—General Average Death-Rate Table:—Annual Rate of Mortality to 1,000 of the Population in the Eleven Divisions of England.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in						
	Ten Years, 1861-70.	1872. Quarters ending				1873. Quarters ending	
		March.	June.	Sept.	Dec.		
England and Wales .....	22·4	26·5	21·0	20·4	20·2	23·0	20·4
I. London .....	24·3	24·0	20·7	21·4	19·8	22·7	20·0
II. South-Eastern counties ....	19·1	19·2	17·0	16·9	16·2	18·8	16·5
III. South Midland ,....	20·2	20·8	18·4	18·3	18·0	20·8	17·5
IV. Eastern counties .....	20·1	21·1	17·8	17·5	18·1	20·9	18·6
V. South-Western counties ....	19·9	21·4	19·1	16·1	17·8	21·2	18·2
VI. West Midland ,....	21·8	22·9	21·1	19·6	20·8	23·6	19·8
VII. North Midland ,....	20·8	21·9	21·3	21·4	19·3	22·9	20·1
VIII. North-Western ,....	26·3	26·6	23·8	24·0	23·8	26·9	24·1
IX. Yorkshire .....	24·0	25·5	23·7	23·9	22·5	23·8	22·1
X. Northern counties .....	22·7	27·3	23·3	22·9	22·3	23·8	22·9
XI. Monmouthshire and Wales	21·6	23·9	21·9	18·0	19·9	23·8	21·7

**D.—Special Average Death-Rate Table:—ANNUAL RATE OF MORTALITY per 1,000 in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1873-71.**

	Area in Statute Acres.  2	Population Enumerated.  1871.  12,892,982	Quarters ending	Annual Rate of Mortality per 1,000 in each Quarter of the Years					
				1873.	Mean '68-72.	1872.	1871.		
				March ..	24·4	27·3	25·4		
In 130 Districts, and 59 Sub-districts, comprising the Chief Towns.....	3,183,965	12,892,982	June ....	21·6	23·4	22·6	22·9		
			Sept. ....	—	24·1	23·0	24·0		
			Dec. ....	—	24·8	22·0	26·4		
Year ....				—	24·9	23·3	25·0		
Year ....				—	19·7	18·6	19·5		
In the remaining Dis- tricts and Sub-districts of England and Wales, comprising chiefly Small Towns and Country Parishes.....	34,135,256	9,819,284	March ..	21·1	22·6	20·9	22·0		
			June ....	18·8	19·7	18·9	19·1		
			Sept. ....	—	17·7	17·0	17·4		
Dec. ....				—	18·7	17·7	19·5		

*Note.*—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year, 92 days. For this inequality a correction has been made in these calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

**E.—Special Town Table:—POPULATION; BIRTHS, DEATHS; MEAN TEMPERATURE and RAINFALL in the Second Quarter of 1873, in TWENTY-ONE Large Towns.**

Cities, &c.	Estimated Population in the Middle of the Year 1873.	Births in 13 Weeks ending 28th June, 1873.	Deaths in 13 Weeks ending 28th June, 1873.	Annual Rate to 1,000 Living during the 13 Weeks ending 28th June.		Mean Temperature in 13 Weeks ending 28th June, 1873.	Rainfall in Inches in 13 Weeks ending 28th June, 1873.
				Births.	Deaths.		
Total of 21 towns in U. K.	7,507,575	68,408	42,521	36·6	22·7	50·2	4·17
London .....	3,356,073	28,381	16,690	33·9	20·0	51·5	3·94
Portsmouth.....	118,280	988	499	33·5	16·9	50·0	—
Norwich .....	81,677	660	396	32·4	19·5	49·1	3·35
Bristol .....	189,648	1,734	1,104	36·7	23·4	50·3	4·18
Wolverhampton.....	70,084	733	370	42·0	21·2	50·4	5·71
Birmingham .....	355,540	3,565	1,932	40·2	21·8	50·3	5·01
Leicester .....	102,694	1,067	559	41·7	21·8	—	—
Nottingham .....	89,557	818	468	36·7	21·0	50·8	3·94
Liverpool.....	505,274	4,562	3,033	36·2	24·1	50·6	2·69
Manchester .....	354,057	3,521	2,561	39·9	29·0	—	—
Salford.....	130,468	1,372	989	42·2	30·4	49·6	4·86
Oldham .....	85,141	823	563	38·8	26·5	—	4·27
Bradford .....	156,609	1,595	954	40·9	24·4	50·7	2·76
Leeds .....	272,619	2,897	1,706	42·7	25·1	50·1	3·88
Sheffield .....	254,352	2,636	1,618	41·6	25·5	50·0	4·16
Hull.....	128,125	1,231	661	38·6	20·7	48·5	4·65
Sunderland .....	102,450	1,120	542	43·9	21·2	—	—
Newcastle-on-Tyne .....	133,246	1,433	898	43·2	27·0	—	—
Edinburgh .....	208,553	1,834	1,192	35·3	22·9	49·8	—
Glasgow .....	498,462	5,067	3,841	40·8	30·9	49·7	6·42
Dublin.....	314,666	2,371	1,945	30·2	24·8	52·1	3·06

F.—*Divisional Table:—MARRIAGES Registered in Quarters ended 31st March, 1873-71; and BIRTHS and DEATHS in Quarters ended 30th June, 1873-71.*

1 DIVISIONS. (England and Wales.)	2 AREA* in Statute Acres.	3 POPULATION, 1871. (Persons.)	4 5 6 MARRIAGES in Quarters ended 31st March.		
			1873.	1872.	1871.
			No.	No.	No.
ENGLD. & WALES.... <i>Totals</i>	37,319,221	22,712,266	41,209	40,557	36,229
I. London .....	75,362	3,254,260	6,582	6,661	5,957
II. South-Eastern .....	3,994,431	2,167,726	2,965	2,915	2,670
III. South Midland .....	3,201,325	1,442,654	1,758	1,738	1,595
IV. Eastern .....	3,211,441	1,218,728	1,572	1,562	1,428
V. South-Western .....	4,981,170	1,880,777	2,784	2,919	2,828
VI. West Midland .....	3,945,460	2,720,669	4,948	4,770	4,196
VII. North Midland.....	3,535,445	1,406,935	2,296	2,274	2,126
VIII. North-Western.....	1,998,914	3,389,044	7,646	7,468	6,536
IX. Yorkshire .....	3,702,384	2,395,569	4,971	4,862	4,124
X. Northern .....	3,547,947	1,414,234	3,203	2,943	2,529
XI. Monmthsh. & Wales	5,125,342	1,421,670	2,484	2,445	2,240

7 DIVISIONS. (England and Wales.)	8 BIRTHS in Quarters ended 30th June.	9	10	11 DEATHS in Quarters ended 30th June.		
				1873.	1872.	1871.
				No.	No.	No.
ENGLD. & WALES.... <i>Totals</i>	206,618	208,711	200,877	118,751	120,914	120,870
I. London .....	28,381	29,141	27,290	16,690	17,096	18,815
II. South-Eastern .....	16,535	17,791	16,961	9,259	9,375	10,099
III. South Midland.....	12,091	12,840	12,021	6,445	6,703	6,982
IV. Eastern .....	9,807	10,373	9,985	5,735	5,464	5,799
V. South-Western .....	14,655	14,825	14,627	8,584	8,994	8,759
VI. West Midland .....	25,804	25,714	24,957	13,771	14,510	13,465
VII. North Midland.....	12,952	12,626	12,350	7,198	7,574	6,662
VIII. North-Western.....	33,494	34,014	32,439	21,035	20,456	20,786
IX. Yorkshire .....	23,842	23,379	22,797	13,703	14,469	13,158
X. Northern .....	15,823	15,018	14,366	8,468	8,423	8,822
XI. Monmthsh. & Wales	13,234	12,990	13,084	7,863	7,850	7,523

\* These are revised figures, and will be found to differ somewhat from those hitherto published.

## G.—General Meteorological Table, Quarter ended June, 1873.

[Abstracted from the particulars supplied to the Registrar-General by JAMES GLAISHER, ESQ., F.R.S., &amp;c.]

1873.	Temperature of										Elastic Force of Vapour.	Weight of Vapour in a Cubic Foot of Air.		
	Air.		Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames					
	Mean.	Diff. from Average of 102 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.				
April ...	45°·9	-0°·1	-1°·2	42°·7	-1°·4	38°·9	-1°·8	19°·5	+0°·9	49°·3	In. ·237	In. -0°17	Gr. 2°·8	Gr. -0°·1
May ...	50°·6	-2°·0	-2°·4	47°·3	-1°·9	43°·7	-1°·8	19°·8	-0°·7	53°·3	·285	-0°18	3°·3	-0°·1
June ...	58°·9	+0°·7	-0°·1	55°·3	-0°·7	52°·1	-1°·4	19°·2	-1°·9	60°·7	·389	-0°18	4°·3	+0°·2
Mean ...	51°·8	-0°·5	-1°·2	48°·4	-1°·3	44°·9	-1°·7	19°·5	-0°·6	54°·4	·304	-0°18	3°·5	0°·1

  

1873.	Months.	Degree of Humidity.	Reading of Barometer.	Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass.					
		Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 58 Years.		At or below 30°.	Between 30° and 40°.	Above 40°.	Number of Nights it was		
		Mean.	Diff. from Average of 102 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.		Sum 25	Sum 36	Sum 30	Lowest 17°·4	Highest 56°·2	
April ...	78	-1	In. 29°·822	In. +0°·53	Gr. 546	Gr. +3	In. 0°·6	In. -1°·1	Miles. 291	19	10	1	17°·4	43°·6
May ...	78	+2	29°·795	+0°·014	540	-1	1°·5	-0°·6	270	6	19	6	23°·3	48°·1
June ...	78	+4	29°·794	-0°·020	531	-1	2°·6	+0°·7	251	0	7	23	33°·0	56°·2
Mean ...	78	+2	29°·804	+0°·016	539	0	Sum 4°·7	Sum -1°·0	Mean 271	Sum 25	Sum 36	Sum 30	Lowest 17°·4	Highest 56°·2

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

The mean temperature of April was 45°·9, being 0°·1 lower than the average of 102 years, and lower than in any year back to 1861, when 44°·3 was recorded, the average values for the intervening years being about 48°.

The mean temperature of May was 50°·6, being 2°·0 lower than the average of 102 years, 0°·3 lower than in 1872, but 0°·1 higher than in 1869.

The mean temperature of June was 58°·9, being 0°·7 higher than the average of 102 years, 0°·3 lower than in 1872, but 4°·1 higher than in 1871.

The mean high day temperatures of each of the three months in the quarter were lower than their respective averages.

The mean low night temperatures of the three months were also lower than their respective averages.

Therefore the days and nights throughout the quarter were cold.

The daily ranges of temperature were less than their respective averages in May and June by 0°·7 and 1°·0, but greater in April by 0°·9.

## H.—Special Meteorological Table, Quarter ended 30th June, 1873.

1 NAMES OF STATIONS.	2 Mean Pressure of Dry Air reduced to the Level of the Sea.	3 Highest Reading of the Thermo- meter.	4 Lowest Reading of the Thermo- meter.	5 Range of Tem- perature in the Quarter.	6 Mean Monthly Range of Tem- perature.	7 Mean Daily Range of Tem- perature.	8 Mean Tem- perature of the Air.	9 Mean Degree of Hu- midity.
Guernsey.....	29·687	69·0	33·5	35·5	22·7	10·6	51·4	84
Osborne .....	29·673	75·7	33·1	42·6	33·8	16·6	52·2	83
Barnstaple .....	29·691	73·0	31·5	41·5	32·7	15·4	53·3	80
Royal Observatory	29·673	81·2	28·7	52·5	41·6	19·5	51·8	78
Royston .....	29·695	85·0	27·1	57·9	44·4	22·7	50·9	80
Norwich .....	29·649	78·5	28·0	50·5	34·7	16·8	49·8	84
Llandudno .....	29·694	74·6	33·4	41·2	31·5	15·9	52·3	75
Derby .....	29·675	78·0	29·0	49·0	36·7	16·5	51·0	76
Stonyhurst .....	29·678	73·4	27·9	45·5	36·5	16·0	49·6	84
Bradford.....	29·651	76·0	32·6	43·4	32·3	15·4	51·0	72
North Shields.....	29·731	71·8	29·6	42·2	28·5	11·9	47·5	81

10 NAMES OF STATIONS.	11	12	13	14	15	16	17	18
	WIND.					Mean Amount of Cloud.	RAIN.	
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount Collected.
Guernsey.....	1·3	9	6	7	9	4·8	32	3·74
Osborne .....	—	9	5	6	10	6·3	34	3·79
Barnstaple .....	1·3	6	5	9	11	4·2	32	4·91
Royal Observatory	0·3	9	6	5	10	6·9	35	4·66
Royston .....	—	12	4	6	9	6·5	34	3·54
Norwich .....	—	9	6	5	10	—	35	4·21
Llandudno .....	0·6	—	—	—	—	6·1	27	2·89
Derby .....	—	7	7	6	11	—	36	4·98
Stonyhurst .....	—	6	6	3	15	7·0	57	7·68
Bradford.....	—	—	—	—	—	4·9	29	3·13
North Shields.....	1·9	10	8	4	8	6·5	55	5·53

## No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER  
ENDED 30TH JUNE, 1873.

I.—*Serial Table:—Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Population estimated to the Middle of each Year, also the Number during each Quarter of the Years 1873-69 inclusive.*

	1873.		1872.		1871.		1870.		1869.	
	Number.	Per Cent.								
<i>1st Quarter—</i>										
Births .....	30,210	3·52	29,506	3·47	28,902	3·43	28,674	3·44	28,429	3·44
Deaths.....	21,443	2·50	21,245	2·50	19,756	2·34	22,184	2·66	20,431	2·47
Marriages ..	6,618	0·77	5,820	0·68	5,415	0·64	5,631	0·67	5,291	0·64
<i>Mean Temperature }</i>	38°·1		40°·7		39°·1		36°·9		40°·0	
<i>2nd Quarter—</i>										
Births .....	31,283	3·64	30,726	3·61	30,583	3·63	30,645	3·67	29,472	3·56
Deaths.....	19,931	2·32	19,045	2·24	18,715	2·22	17,984	2·15	19,449	2·35
Marriages ..	6,690	0·78	6,398	0·75	5,946	0·70	5,754	0·69	5,596	0·67
<i>Mean Temperature }</i>	49°·2		49°·2		48°·7		51°·0		48°·4	
<i>3rd Quarter—</i>										
Births .....	—	—	29,181	3·43	28,689	3·40	28,272	3·39	27,646	3·33
Deaths.....	—	—	16,692	1·96	16,835	2·00	16,555	2·03	16,532	2·00
Marriages ..	—	—	5,891	0·69	5,424	0·64	5,301	0·63	4,870	0·59
<i>Mean Temperature }</i>	—		55°·8		56°·3		57°·1		56°·4	
<i>4th Quarter—</i>										
Births .....	—	—	29,460	3·46	27,953	3·32	27,832	3·26	27,848	3·37
Deaths.....	—	—	18,759	2·20	19,338	2·29	17,344	2·08	19,377	2·34
Marriages ..	—	—	7,471	0·88	7,181	0·85	7,102	0·85	6,326	0·76
<i>Mean Temperature }</i>	—		41°·8		41°·3		39°·6		40°·9	
<i>Year—</i>										
Population .	3,430,923		3,399,226		3,367,922		3,336,707		3,305,885	
Births .....	—	—	118,873	3·49	116,127	3·45	115,423	3·46	113,395	3·41
Deaths.....	—	—	75,741	2·22	74,644	2·22	74,067	2·22	75,789	2·29
Marriages ..	—	—	25,580	0·75	23,966	0·71	23,788	0·71	22,083	0·66

II.—*Special Average Table:—Number of Births, Deaths, and Marriages in Scotland and in the Town and Country Districts during the Quarter ending 30th June, 1873, and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

Registration Groups of Districts.	Population.		Total Births.			Illegitimate Births.		
	Census, 1871.	Estimated to Middle of 1873.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND .....	3,360,018	3,430,923	31,283	3·64	27	2,715	8·7	11·5
Principal towns ....	1,068,556	1,114,907	10,837	3·89	26	1,002	9·2	10·8
Large     ,"....	332,180	387,386	3,630	4·18	24	250	6·8	14·5
Small     ,"....	778,164	791,381	7,591	3·84	27	621	8·1	12·2
Mainland rural ....	1,049,114	1,046,283	8,465	3·24	30	800	9·4	10·6
Insular     ,"....	132,004	130,966	760	2·32	43	42	5·5	18·0

Registration Groups of Districts.	Population.		Deaths.			Marriages.		
	Census, 1871.	Estimated to Middle of 1872.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND .....	3,360,018	3,430,923	19,931	2·32	42	6,690	0·78	128
Principal towns ....	1,068,556	1,114,907	7,667	2·72	37	2,691	0·96	103
Large     ,"....	332,180	387,386	2,425	2·79	36	772	0·88	114
Small     ,"....	778,164	791,381	4,516	2·28	44	1,498	0·75	132
Mainland rural ....	1,049,114	1,046,283	4,786	1·83	55	1,651	0·64	158
Insular     ,"....	132,004	130,966	537	1·64	61	78	0·24	420

III.—*Bastardy Table:—Proportion of Illegitimate in every Hundred Births in the Divisions and Counties of Scotland, during the Quarter ending 30th June, 1873.*

Divisions.	Per Cent. of Illegiti- mate.	Counties.	Per Cent. of Illegiti- mate.	Counties.	Per Cent. of Illegiti- mate.	Counties.	Per Cent. of Illegiti- mate.
SCOTLAND .....	8·7						
Northern .....	7·0	Shetland ....	2·7	Forfar .....	11·5	Lanark.....	7·4
North-Western	5·1	Orkney .....	6·5	Perth .....	9·4	Linlithgow .	9·9
North-Eastern	13·2	Caithness ....	11·1	Fife .....	7·5	Edinburgh .	8·6
East Midland ..	9·6	Sutherland....	4·8	Kimross .....	4·2	Haddington	6·1
West Midland.	6·5	Ross and } Cromarty }	3·5	Clackman- } nan .....	6·6	Berwick ....	10·2
South-Western	7·3	Inverness ....	6·5	Stirling .....	7·3	Peebles.....	8·2
South-Eastern.	8·7	Nairn .....	0·0	Dumbarton ..	5·3	Selkirk .....	9·5
Southern .....	13·7	Elgin .....	12·7	Argyll .....	6·6	Roxburgh ..	8·8
		Banff .....	14·3	Bute .....	5·1	Dumfries ....	15·8
		Aberdeen ....	13·0	Renfrew .....	6·7	Kirkcud- } bright ..}	12·7
		Kincardine....	16·1	Ayr .....	7·6	Wigtown ....	17·3

IV.—*Divisional Table:—MARRIAGES, BIRTHS, and DEATHS Registered in the Quarter ended 30th June, 1873.*

1 DIVISIONS. (Scotland)	2 AREA in Statute Acres.	3 POPULATION, 1871. (Persons.)	4 Marriages.	5 Births.	6 Deaths.
SCOTLAND ..... <i>Totals</i>	19,639,377	3,360,018	6,618	31,283	19,931
i. Northern .....	2,261,622	127,191	97	830	561
ii. North-Western.....	4,739,876	166,351	142	977	736
iii. North-Eastern .....	2,429,594	393,199	680	3,258	1,751
iv. East Midland .....	2,790,492	559,676	1,084	4,854	2,956
v. West Midland .....	2,693,176	251,088	363	2,254	1,469
vi. South-Western.....	1,462,397	1,183,218	2,813	13,074	8,776
vii. South-Eastern .....	1,192,524	475,523	1,130	4,438	2,594
viii. Southern .....	2,069,696	203,772	381	1,598	1,088

No. III.—GREAT BRITAIN AND IRELAND.

SUMMARY of MARRIAGES, in the Quarter ended 31st March, 1873; and BIRTHS and DEATHS, in the Quarter ended 30th June, 1873.

COUNTRIES.	[000's omitted].		Marriages.	Per 1,000 of Popu- lation.	Births.	Per 1,000 of Popu- lation.	Deaths.	Per 1,000 of Popu- lation.
	Area in Statute Acres.	Popu- lation, 1871. (Persons.)						
England and Wales .....	37,325,	22,712,	41,209	1·8	206,618	9·1	118,751	5·2
Scotland .....	19,639,	3,360,	6,618	2·0	31,283	9·3	19,931	5·9
Ireland .....	20,323,	5,403,	10,540	1·9	39,502	7·3	26,099	4·8
GREAT BRITAIN AND IRELAND }	77,287,	31,475,	58,367	1·9	277,403	8·6	164,781	5·3

*Note.*—The numbers against Ireland represent the marriages, births, and deaths that the local registrars have succeeded in recording; but how far the registration approximates to absolute completeness, does not at present appear to be known. It will be seen that the Irish ratios of births and marriages are under those of England and Scotland.—ED. S. J.

## I.—Number of Occupiers of Land and of Owners of Live Stock; the Average Size of each Holding in 1872.

1 ENGLAND. — Counties, Proper.	2 Number of Returns Obtained from Occupiers of Land.	3 Average Acreage of each Occupier.	1 ENGLAND. — Counties, Proper.	2 Number of Returns Obtained from Occupiers of Land.	3 Average Acreage of each Occupier.
<i>South-Eastern</i> —			<i>North Midland</i> —		
Surrey .....	5,651	306	Leicester .....	8,792	30
Kent .....	11,329	199	Rutland .....	1,523	2
Sussex .....	8,803	59	Lincoln .....	26,017	123
Southampton ....	9,264	91	Nottingham .....	8,452	38
Berks .....	4,454	44	Derby .....	13,656	22
Total .....	39,501	699	Total .....	58,440	215
<i>South Midland</i> —			<i>North-Western</i> —		
Middlesex .....	2,986	599	Chester .....	13,613	80
Hertford .....	4,537	23	Lancaster .....	22,788	414
Buckingham ....	5,592	23	Total .....	36,401	494
Oxford .....	4,806	7	<i>York</i> —		
Northampton ....	7,366	11	East Riding .....	8,585	53
Huntingdon ....	3,156	17	North „ .....	15,106	235
Bedford .....	4,144	2	West „ .....	31,810	190
Cambridge .....	8,017	9	Total .....	55,501	478
Total .....	40,604	691	<i>Northern</i> —		
<i>Eastern</i> —			Durham .....	6,561	54
Essex .....	9,850	53	Northumberland .....	5,523	320
Suffolk .....	10,570	30	Cumberland .....	7,748	27
Norfolk .....	19,636	64	Westmorland .....	3,778	9
Total .....	40,056	147	Total .....	23,610	410
<i>South-Western</i> —			Total of England..	419,033	4,389
Wilts .....	8,030	14	<i>Wales</i> —		
Dorset .....	5,422	16	Monmouth .....	4,797	8
Devon .....	19,529	38	North Wales.....	27,427	101
Cornwall .....	13,692	26	South „ .....	30,165	92
Somerset .....	17,564	29	Total of Wales....	62,389	201
Total .....	64,237	123	Total of Scot- land .....	80,565	2,178
<i>West Midland</i> —			Total of Great Britain .....	561,987	6,768
Gloucester .....	11,571	12			
Hereford .....	7,458	13			
Salop .....	11,717	38			
Stafford .....	14,065	226			
Worcester .....	7,913	87			
Warwick .....	7,959	756			
Total .....	60,683	1,132			
		54			55

\* See "Annual Reports" of the Registrar-General for Ireland.

II.—*Population, Area, Abstract of Acreage under Crops, &c., and Number of Live*

	Years.	England.	Wales.	Scotland.	Total for Great Britain.
Total population .....	1871	21,488,	1,216,	3,359,	26,063,
Total area (in statute acres) .....	—	32,590,	4,734,	19,639,	56,964,
<i>Abstract of Acreage—</i>					
Under all kinds of crops, bare fallow, and grass .....	1871	23,718,	2,605,	4,516,	30,839,
'72	23,830,	2,636,	4,538,	31,004,	
Under corn crops (including beans and peas) .....	1871	7,684,	561,	1,431,	9,675,
'72	7,577,	562,	1,435,	9,574,	
Under green crops .....	1871	2,898,	137,	704,	3,738,
'72	2,779,	136,	701,	3,616,	
,, bare fallow .....	1871	484,	38,	21,	543,
'72	585,	35,	28,	648,	
,, grass—Clover, &c. under rotation .....	1871	2,694,	375,	1,300,	4,369,
'72	2,822,	371,	1,320,	4,513,	
Permanent pasture .....	1871	9,882,	1,494,	1,059,	12,435,
'72	9,991,	1,532,	1,053,	12,576,	
<i>Percentage of Acreage—*</i>					
Under corn crops (including beans and peas) .....	1871	32·4	21·5	31·7	31·4
'72	31·8	21·3	31·6	30·9	
Under green crops .....	1871	12·3	5·2	15·5	12·1
'72	11·6	5·2	15·5	11·6	
,, bare fallow .....	1871	2·0	1·5	0·4	1·8
'72	2·4	1·3	0·6	2·1	
,, grass—Clover, &c. under rotation .....	1871	11·4	14·4	28·8	14·2
'72	11·9	14·1	29·1	14·5	
Permanent pasture .....	1871	41·7	57·4	23·5	40·3
'72	42·0	58·1	23·2	40·6	
Total .....	—	100·0	100·0	100·0	100·0
Acreage of orchards, or of arable or grass land, used also for fruit trees .....	1872	156,	11,	3,	170,
Acreage of woods, coppices, and plantations.....	'72	1,326,	127,	734,	2,187,
<i>Abstract of Live Stock—</i>					
Total number of horses† .....	1871	963,	117,	174,	1,254,†
'72	963,	118,	177,	1,258,†	
,, cattle .....	1871	3,671,	597,	1,070,	5,338,
'72	3,902,	603,	1,121,	5,625,	
,, sheep .....	1871	17,530,	2,706,	6,883,	27,120,
'72	17,913,	2,867,	7,141,	27,922,	
,, pigs .....	1871	2,079,	225,	196,	2,500,
'72	2,348,	238,	186,	2,772,	
<i>Number to every 100 Acres under Crops, Fallow, and Grass—</i>					
Horses† .....	1871	4·1	4·5	3·9	4·1†
'72	4·0	4·4	3·9	4·1†	
Cattle.....	1871	15·5	22·9	23·7	17·3
'72	16·4	22·9	24·7	18·1	
Sheep.....	1871	73·9	103·9	152·4	87·9
'72	75·2	108·8	157·4	90·0	
Pigs .....	1871	8·8	8·7	4·3	8·1
'72	9·9	9·0	4·1	8·9	
<i>Number of Returns Obtained—</i>					
From occupiers of land .....	1872	424,	58,	81,	562,
,, owners of live stock only .....	'72	4,	—	2,	7,

\* Stated exclusively of the small percentages for flax and hops.

† In Great Britain only horses used for agriculture, unbroken horses, and mares kept solely for breeding, are included in the returns. The proportionate number of horses for 100 acres in Great Britain would be increased from 4·1 to 6·8 by adding 857,048 in 1872, the number of horses subject to duty, to the number included in the Agricultural Returns. In Ireland all descriptions of horses are included in the returns.

Stock, in each Division of the United Kingdom. [000's omitted from the quantities.]

Ireland. <sup>‡</sup>	Isle of Man.	Channel Islands.		Total for United Kingdom.	Years.	
		Jersey.	Guernsey, &c.			
5,403,	54,		91,	31,610,	1871	Total population
20,820,	180,	29,	18,	78,011,	—	Total area (in statute acres)
15,711, <sup>§</sup>	87,	19,	12,	46,667,	1871	<i>Abstract of Acreage</i> —
15,747, <sup>§</sup>	89,	18,	12,	46,869,	'72	Under all kinds of crops, bare fallow, and grass
2,124,	28,	4,	2,	11,833,	'71	Under corn crops (including beans and peas)
2,091,	29,	3,	2,	11,698,	'72	Under green crops
1,512,	13,	6,	3,	5,271,	'71	" bare fallow
1,474,	12,	6,	3,	5,112,	'72	" grass—Clover, &c. under rotation
22,	—	—	—	566,	'71	Permanent pasture
19,	1,	—	—	667,	'72	
1,828,	32,	6,	1,	6,237,	'71	
1,800,	35,	5,	1,	6,354,	'72	
10,069,	13,	3,	5,	22,526,	'71	
10,242,	12,	4,	5,	22,838,	'72	
13.6	32.6	19.4	17.0	25.4	1871	<i>Percentage of Acreage</i> *—
13.3	32.2	18.9	17.2	25.0	'72	Under corn crops (including beans and peas)
9.6	14.7	30.2	27.8	11.3	'71	Under green crops
9.4	14.0	32.1	28.9	10.9	'72	" bare fallow
0.1	0.4	0.8	1.6	1.2	'71	" grass—Clover, &c. under rotation
0.1	0.7	0.8	0.6	1.4	'72	Permanent pasture
11.6	37.2	33.5	7.5	13.4	'71	
11.4	39.0	28.8	10.3	13.6	'72	
64.1	15.1	16.1	46.1	48.3	'71	
65.1	14.0	19.4	43.0	48.7	'72	
100.0	100.0	100.0	100.0	100.0	—	Total
—	—	—	—	—	1872	<i>Acreage of orchards, or of arable or grass land, used also for fruit trees</i>
325,	—	—	—	—	'72	<i>Acreage of woods, coppices, and plantations</i>
538,	6,	2,	2,	1,802,	1871	<i>Abstract of Live Stock</i> —
541,	6,	2,	2,	1,808,	'72	Total number of horses†
3,973,	17,	11,	7,	9,346,	'71	" cattle
4,057,	19,	11,	6,	9,719,	'72	" sheep
4,229,	54,	1,	1,	31,404,	'71	" pigs
4,262,	62,	—	1,	32,247,	'72	
1,617,	6,	7,	6,	4,137,	'71	
1,385,	7,	8,	6,	4,178,	'72	
3.4	6.7	12.3	16.1	3.9	1871	<i>Number to every 100 Acres under Crops, Fallow, and Grass</i> —
3.4	6.3	12.3	14.5	3.9	'72	Horses†
25.3	20.1	58.2	58.9	20.0	'71	Cattle
25.8	21.5	60.7	53.2	20.7	'72	Sheep
26.9	61.9	3.4	8.5	67.3	'71	Pigs
27.1	69.7	2.2	7.7	68.8	'72	
10.2	7.3	39.1	55.5	8.8	'71	
8.8	7.5	44.0	52.6	8.9	'72	
—	2,	2,	2,	—	1872	<i>Number of Returns Obtained</i> —
—	—	—	—	—	'72	From occupiers of land
						,, owners of live stock only

‡ The detailed returns for Ireland will be found in the annual reports prepared by the Registrar-General and laid before Parliament.

§ Including under flax, 156,883 acres in 1871, and 122,003 acres in 1872.

III.—*Acreage under Crops and Grass and Number*

1	2	3	4	5	6	7	8	Percentage of Corn Crops to Total under all kinds of Crops, Bare Fallow, and Grass.	HORSES. —	CATTLE. —			
			Number of Acres under Crops and Grass.										
			Total under all kinds of Crops, Bare Fallow, and Grass.	Corn Crops.	Green Crops.	Clover and Artifi- cial and other Grasses under Rotat- ion.	Perma- nent Pasture, and Grass not broken up in Rotation (exclusive of Heath or Mountain Land).						
ENGLAND.	Popula- tion on 3rd April, 1871.	Total Area in Statute Acres.											
Counties, Proper.													
<i>South-Eastern</i> —													
Surrey .....	1,090,	479,	296,	100,	44,	36,	102,	33·8	4·2	13·3			
Kent .....	848,	1,039,	726,	253,	81,	64,	281,	34·9	3·8	9·6			
Sussex .....	417,	937,	651,	211,	76,	71,	263,	32·4	3·7	14·3			
Southampton ..	544,	1,070,	695,	260,	133,	120,	158,	37·4	3·8	8·0			
Berks .....	196,	451,	370,	149,	58,	43,	112,	40·4	3·8	8·6			
Total .....	3,095,	3,976,	2,738,	973,	392,	334,	916,	35·8	3·9	10·8			
<i>South Midland</i> —													
Middlesex .....	2,539,	180,	116,	19,	12,	8,	76,	16·8	4·4	19·6			
Hertford .....	193,	391,	332,	146,	42,	43,	88,	44·1	3·9	8·2			
Buckingham....	176,	467,	400,	137,	37,	34,	183,	34·2	3·9	15·1			
Oxford .....	178,	473,	410,	165,	59,	47,	132,	40·4	3·9	11·4			
Northampton ..	244,	630,	555,	187,	47,	38,	270,	33·7	3·4	19·1			
Huntingdon ....	64,	230,	209,	101,	25,	16,	57,	48·4	4·4	11·5			
Bedford .....	146,	296,	258,	119,	36,	21,	73,	46·2	4·0	11·4			
Cambridge ....	186,	525,	480,	262,	82,	48,	73,	54·6	5·0	8·9			
Total .....	3,726,	3,192,	2,760,	1,136,	340,	255,	952,	39·8	4·1	13·1			
<i>Eastern</i> —													
Essex .....	466,	1,061,	814,	409,	107,	87,	174,	50·2	4·7	8·7			
Suffolk .....	348,	948,	760,	384,	123,	90,	141,	50·4	5·3	8·9			
Norfolk .....,	439,	1,354,	1,061,	455,	206,	172,	221,	42·5	5·2	10·6			
Total .....	1,253,	3,363,	2,635,	1,248,	436,	349,	536,	47·7	5·1	9·1			
<i>South-Western</i> —													
Wilts .....	257,	865,	728,	220,	107,	85,	302,	30·2	2·9	11·4			
Dorset .....	196,	632,	468,	118,	62,	52,	228,	25·3	3·1	15·0			
Devon .....	601,	1,657,	1,070,	308,	157,	173,	400,	28·8	4·3	18·3			
Cornwall .....	362,	874,	513,	155,	61,	140,	135,	30·2	5·3	26·5			
Somerset .....	463,	1,047,	805,	150,	70,	67,	508,	18·6	3·5	23·7			
Total .....	1,879,	5,075,	3,584,	951,	457,	517,	1,573,	26·6	3·8	19·0			
<i>West Midland</i> —													
Gloucester ...	534,	805,	645,	181,	68,	93,	293,	28·1	3·5	16·8			
Hereford .....	125,	535,	430,	112,	37,	44,	222,	26·1	4·3	16·1			
Salop .....	248,	826,	684,	180,	63,	83,	344,	26·3	3·8	18·8			
Stafford .....	857,	728,	583,	126,	43,	57,	346,	21·6	3·3	22·4			
Worcester.....	339,	472,	389,	127,	32,	41,	174,	32·7	4·3	13·0			
Warwick .....	634,	564,	480,	157,	33,	45,	232,	32·7	3·6	17·4			
Total .....	2,737,	3,930,	3,211,	883,	276,	363,	1,611,	27·6	3·8	17·4			

\* For the Irish Statistics,

*† Live Stock in 1872.* [000's omitted, consequently 3,095, = 3,095,000.]

12	13	14	15	16	17	18	19	20	21	22	23	24
SHEEP.	PIGS.	Number of Acres Under										
Number to every 100 Acres under Crops, Bare Fallow, and Grass.	Number to every 100 Acres under Crops, Bare Fallow, and Grass.	Wheat.	Barley or Bere.	Oats.	Beans.	Peas.	Pota-toes.	Turnips and Swedes.	Mangold.	Vetches, Lucerne, and any other Crops except Clover and Grass.	Bare Fallow, and Uncrop-ped Arable Land.	ENGLAND.
29·4	13·1	46,	17,	25,	3,	8,	4,	19,	8,	9,	12,	—
126·5	9·7	115,	40,	51,	24,	23,	13,	30,	10,	22,	9,	—
79·8	7·4	102,	20,	64,	10,	14,	3,	33,	10,	20,	21,	Counties, Proper.
80·8	11·7	111,	58,	69,	6,	13,	5,	84,	11,	25,	20,	
73·5	12·8	64,	36,	27,	12,	9,	1,	34,	5,	14,	7,	
78·0	10·9	438,	171,	236,	55,	67,	26,	200,	44,	90,	69,	Total
29·0	13·4	10,	2,	5,	1,	2,	3,	2,	2,	4,	1,	South-Eastern
50·9	11·5	63,	43,	26,	9,	6,	2,	24,	5,	9,	12,	Surrey
65·0	11·2	60,	28,	24,	16,	8,	2,	19,	4,	10,	8,	Kent
78·3	11·4	66,	51,	23,	16,	9,	2,	37,	6,	12,	6,	Sussex
92·2	7·4	81,	54,	20,	21,	10,	3,	26,	5,	9,	14,	Southampton.
70·9	12·2	47,	22,	11,	13,	7,	4,	3,	4,	7,	10,	Berks
66·6	14·6	55,	29,	9,	19,	7,	5,	11,	4,	9,	9,	
60·2	11·7	133,	57,	35,	25,	11,	13,	13,	17,	20,	14,	
65·4	11·7	515,	286,	153,	120,	60,	34,	135,	47,	80,	74,	Total
41·9	13·9	198,	95,	37,	49,	29,	12,	24,	30,	35,	38,	South Midland
55·8	18·9	159,	136,	14,	41,	27,	3,	57,	35,	25,	21,	Middlesex
64·2	10·3	208,	185,	29,	16,	10,	6,	141,	41,	12,	7,	Hertford
54·0	14·4	565,	416,	80,	106,	66,	21,	222,	106,	72,	66,	Buckingham
41·9	13·9	198,	95,	37,	49,	29,	12,	24,	30,	35,	38,	Oxford
55·8	18·9	159,	136,	14,	41,	27,	3,	57,	35,	25,	21,	Northampton.
64·2	10·3	208,	185,	29,	16,	10,	6,	141,	41,	12,	7,	Huntingdon
54·0	14·4	565,	416,	80,	106,	66,	21,	222,	106,	72,	66,	Bedford
54·0	14·4	565,	416,	80,	106,	66,	21,	222,	106,	72,	66,	Cambridge
86·7	11·2	405,	274,	211,	29,	24,	45,	256,	60,	53,	84,	Total
96·0	10·0	97,	63,	34,	12,	10,	4,	64,	5,	24,	15,	South-Western
105·1	9·9	48,	39,	22,	3,	5,	3,	42,	5,	9,	7,	Wilts
80·5	10·2	130,	84,	89,	1,	3,	20,	84,	27,	9,	32,	Dorset
71·6	13·7	55,	54,	45,	—	—	8,	31,	11,	2,	21,	Devon
80·2	12·4	75,	34,	21,	13,	6,	10,	35,	12,	9,	9,	Cornwall
80·2	12·4	75,	34,	21,	13,	6,	10,	35,	12,	9,	9,	Somerset
86·7	11·2	405,	274,	211,	29,	24,	45,	256,	60,	53,	84,	Total
66·5	11·0	97,	42,	15,	16,	10,	7,	42,	4,	14,	10,	West Midland
73·0	7·8	62,	22,	11,	8,	9,	3,	25,	2,	7,	9,	Gloucester
66·6	10·8	90,	52,	25,	4,	8,	6,	48,	4,	4,	15,	Hereford
50·0	10·4	56,	30,	29,	4,	5,	8,	26,	4,	4,	11,	Salop
55·1	12·2	70,	20,	7,	19,	10,	6,	14,	4,	8,	12,	Stafford
74·6	10·2	80,	28,	14,	24,	10,	3,	18,	5,	7,	13,	Worcester
64·3	10·4	455,	194,	101,	75,	52,	33,	173,	23,	44,	70,	Warwick
64·3	10·4	455,	194,	101,	75,	52,	33,	173,	23,	44,	70,	Total

III.—*Acreage under Crops and Grass and Number of Live*

1	2	3	Number of Acres under Crops and Grass.					9	10	11
			Total under all kinds of Crops, Bare Fallow, and Grass.	Corn Crops.	Green Crops.	Clover and Artificial and other Grasses under Rotation.	Permanent Pasture, and Grass not broken up in Rotation (exclusive of Heath or Mountain Land).			
ENGLAND.	Population on 3rd April, 1871.	Total Area in Statute Acres.								
Counties, Proper.										
<i>North Midland—</i>										
Leicester .....	269,	514,	465,	118,	26,	29,	284,	25·3	3·4	26·9
Rutland.....	22,	96,	84,	27,	8,	7,	40,	31·9	3·4	18·5
Lincoln .....	436,	1,775,	1,456,	621,	236,	165,	405,	42·6	4·2	13·4
Nottingham .....	320,	526,	442,	165,	52,	58,	150,	37·4	4·1	15·6
Derby .....	381,	659,	495,	79,	22,	41,	343,	16·0	3·5	25·5
Total .....	1,428,	3,570,	2,942,	1,010,	344,	300,	1,222,	30·6	3·7	19·9
<i>North-Western—</i>										
Chester .....	561,	707,	512,	91,	33,	65,	318,	17·7	3·7	30·4
Lancaster .....	2,819,	1,219,	740,	106,	52,	77,	501,	14·3	4·2	30·6
Total .....	3,380,	1,926,	1,252,	197,	85,	142,	819,	16·0	3·9	30·5
<i>York—</i>										
West Riding....	1,831,	1,709,	1,165,	249,	94,	102,	691,	21·4	3·9	20·1
East „ .....	313,	771,	661,	282,	111,	84,	161,	42·6	5·5	11·9
North „ .....	292,	1,350,	815,	226,	76,	80,	396,	27·8	4·6	18·6
Total .....	2,436,	3,830,	2,641,	757,	281,	266,	1,248,	30·6	4·7	16·9
<i>Northern—</i>										
Durham .....	685,	622,	408,	101,	33,	53,	193,	24·7	3·8	14·4
Northumber- land .....	387,	1,249,	669,	150,	61,	89,	344,	22·5	2·7	14·2
Cumberland ....	220,	1,001,	536,	105,	49,	107,	266,	19·7	3·6	23·4
Westmorland	65,	485,	232,	22,	11,	20,	178,	9·5	3·1	26·0
Total .....	1,357,	3,357,	1,845,	378,	154,	269,	981,	19·1	3·3	19·5
<i>Total of Eng- land .....</i>	<i>21,293,</i>	<i>32,222,</i>	<i>23,604,</i>	<i>7,535,</i>	<i>2,763,</i>	<i>2,794,</i>	<i>9,857,</i>	<i>31·8</i>	<i>4·0</i>	<i>16·4</i>
<i>Wales—</i>										
Monmouth ....	195,	368,	226,	42,	16,	28,	134,	18·7	4·3	17·3
South Wales....	764,	2,732,	1,564,	316,	74,	193,	959,	20·0	4·6	20·8
North „ .....	452,	2,003,	1,072,	246,	62,	178,	573,	22·6	4·2	25·0
Total of Wales	1,411,	5,103,	2,862,	604,	152,	399,	1,666,	20·4	4·4	21·0
<i>Total of Scot- land .....</i>	<i>3,359,</i>	<i>19,639,</i>	<i>4,538,</i>	<i>1,434,</i>	<i>701,</i>	<i>1,320,</i>	<i>1,052,</i>	<i>31·6</i>	<i>3·9</i>	<i>24·7</i>
<i>Total of Great Britain .....</i>	<i>26,063,</i>	<i>56,964,</i>	<i>31,004,</i>	<i>9,574,</i>	<i>3,616,</i>	<i>4,513,</i>	<i>12,576,</i>	<i>30·9</i>	<i>4·1</i>	<i>18·1</i>

\* For the Irish Statistics,

took in 1872—Contd. [000's omitted, consequently 1,428, = 1,428,000.]

12 SHEEP.	13 PIGS.	14	15	16	17	18	19	20	21	22	23	24
Number of Acres Under												
Number to every 100 Acres under Crops, Bare Fallow, and Grass.	Number to every 100 Acres under Crops, Bare Fallow, and Grass.	Wheat.	Barley or Bere.	Oats.	Beans.	Peas.	Pota-toes.	Turnips and Swedes.	Man-gold.	Vetches, Lucerne, and any other Crops except Clover and Grass.	Bare Fallow, and Uncrop-ped Arable Land.	ENGLAND.
90·5	7·0	48,	32,	22,	9,	7,	2,	13,	5,	4,	9,	—
111·9	5·4	10,	11,	4,	1,	1,	—	6,	—	1,	2,	—
102·6	8·5	305,	155,	104,	32,	22,	43,	133,	18,	24,	26,	—
59·6	7·6	75,	47,	20,	11,	10,	6,	35,	4,	7,	16,	—
47·2	8·7	31,	15,	29,	2,	3,	3,	11,	2,	4,	10,	—
82·4	7·4	469,	260,	179,	55,	43,	54,	198,	29,	40,	63,	Total
21·2	13·2	34,	4,	46,	4,	—	21,	8,	2,	2,	5,	North Midland
44·0	6·3	38,	10,	50,	6,	—	35,	11,	2,	2,	5,	Chester
32·6	9·7	72,	14,	96,	10,	—	56,	19,	4,	4,	10,	Lancaster
63·3	7·0	102,	72,	54,	11,	8,	23,	57,	3,	9,	25,	—
78·3	9·1	117,	60,	75,	14,	14,	10,	76,	3,	12,	23,	West Riding
88·6	8·3	74,	69,	64,	10,	7,	9,	55,	1,	5,	36,	East „
76·7	8·1	293,	201,	193,	35,	29,	42,	188,	7,	26,	84,	North „
47·1	3·6	39,	18,	38,	2,	3,	8,	21,	—	4,	28,	Durham
133·9	2·8	37,	39,	64,	5,	4,	6,	49,	—	4,	24,	{ Northum- berland
99·0	6·6	26,	10,	69,	—	—	11,	33,	1,	—	8,	Cumberland
154·7	2·5	2,	4,	16,	—	—	2,	8,	—	—	1,	Westmorlnd.
108·7	3·9	104,	71,	187,	7,	7,	27,	111,	1,	8,	61,	Total
75·2	9·9	3,317,	1,884,	1,435,	496,	351,	337,	1,502,	320,	417,	579,	{ Total of Eng- land
81·8	8·3	20,	12,	7,	—	2,	2,	10,	1,	3,	6,	Wales—
114·5	7·4	63,	106,	143,	—	2,	23,	41,	4,	5,	21,	Monmouth
103·1	10·6	63,	62,	113,	3,	4,	25,	28,	3,	5,	14,	South Wales
99·8	8·8	146,	180,	263,	3,	8,	50,	79,	8,	13,	41,	North „
157·4	4·1	136,	252,	1,008,	25,	3,	177,	2502,	2,	15,	28,	{ Total of Scot- land
90·0	8·9	3,599,	2,316,	2,706,	524,	362,	564,	2,084,	329,	445,	648,	{ Total of Gt. Britain

**Trade of United Kingdom, 1873-72-71.—Distribution of Exports\* from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.**

Merchandise (excluding Gold and Silver), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Three Months.					
	1873.		1872.		1871.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	5,408,	1,589,	6,375,	1,099,	4,082,	848,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	11,308,	12,928,	10,392,	12,528,	10,339,	9,275,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries) .....	15,200,	6,400,	13,660,	6,129,	9,262,	6,331,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	1,705,	2,846,	1,828,	2,303,	1,980,	2,276,
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	6,711,	3,916,	7,293,	3,323,	5,908,	2,805,
Northern Africa; viz., Tripoli, Tunis, Algeria and Morocco .....	284,	108,	261,	93,	129,	42,
Western Africa .....	435,	262,	376,	234,	443,	211,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorua Islands.....	80,	83,	14,	67,	101,	22,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands .....	506,	285,	638,	274,	491,	274,
South Sea Islands .....	10,	14,	61,	10,	20,	—
China, including Hong Kong .....	3,275,	2,653,	4,241,	2,711,	3,974,	2,908,
United States of America .....	20,530,	12,543,	17,370,	12,102,	20,190,	9,248,
Mexico and Central America .....	265,	306,	487,	251,	282,	312,
Foreign West Indies and Hayti .....	432,	1,046,	619,	790,	366,	796,
South America (Northern), New Granada, Venezuela, and Ecuador	387,	899,	333,	776,	330,	614,
" (Pacific), Peru, Bolivia, Chili, and Patagonia .....	2,262,	1,533,	2,481,	1,189,	2,170,	848,
" (Atlantic) Brazil, Uruguay, and Buenos Ayres .....	2,269,	3,173,	3,267,	3,048,	2,520,	1,994,
Whale Fisheries; Grnlnd., Davis' Straits, Southn. Whale Fishery, & Falkland Islands .....	—	—	11,	3,	—	—
Total—Foreign Countries .....	71,067,	50,584,	69,707,	46,930,	62,587,	38,804,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore .....	7,149,	5,497,	10,613,	5,368,	6,950,	4,952,
Austral. Cols.—N. So. W., Vict., and Queensld.	2,728,	2,506,	3,332,	1,882,	2,380,	1,302,
" " So. Aus., W. Aus., Tasm., and N. Zealand .....	1,564,	920,	1,709,	608,	1,118,	433,
British North America .....	279,	494,	238,	658,	509,	584,
" W. Indies with Btsh. Guiana & Honduras	773,	782,	949,	883,	935,	705,
Cape and Natal .....	851,	1,121,	776,	968,	731,	487,
Brt. W. Co. of Af., Ascension and St. Helena	71,	162,	105,	238,	322,	133,
Mauritius .....	460,	145,	603,	171,	185,	111,
Channel Islands .....	115,	164,	114,	178,	96,	208,
Total—British Possessions .....	13,990,	11,791,	18,439,	10,954,	13,226,	8,915,
General Total .....	£ 85,055,	62,376,	88,146,	57,884,	75,813,	47,719,

\* i.e., British and Irish produce and manufactures.

**IMPORTS.** — (United Kingdom.) — **First Five Months** (*January — May*),  
**1873-72-71-70-69.** — *Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Five Months.) FOREIGN ARTICLES IMPORTED.	[000's omitted.]	1873.	1872.	1871.	1870.	1869.
		£	£	£	£	£
RAW MATLS.— <i>Textile, &amp;c.</i>	Cotton Wool ....	29,938,	30,457,	30,080,	26,328,	21,969,
	Wool (Sheep's) ..	11,140,	11,087,	8,857,	7,942,	6,579,
	Silk*.....	5,457,	5,520,	5,892,	8,583,	6,252,
	Flax .....	1,751,	1,696,	1,207,	1,397,	1,212,
	Hemp .....	2,579,	2,938,	2,756,	1,684,	1,597,
	Indigo .....	1,829,	2,174,	1,806,	1,122,	1,537,
		52,694,	53,872,	50,598,	47,056,	39,146,
" "	<i>Various.</i> Hides .....	2,745,	2,558,	1,581,	1,166,	892,
	Oils .....	1,797,	1,856,	1,945,	1,372,	1,376,
	Metals .....	4,449,	5,139,	3,772,	1,585,	1,544,
	Tallow .....	1,029,	1,288,	1,225,	927,	635,
	Timber .....	3,554,	2,547,	2,145,	1,162,	1,183,
		13,574,	13,389,	10,668,	6,212,	5,630,
" "	<i>Agrietl.</i> Guano .....	743,	315,	1,311,	1,092,	335,
	Seeds .....	2,550,	3,198,	2,955,	732,	1,023,
		3,293,	3,513,	4,266,	1,824,	1,358,
TROPICAL, &c., PRODUCE.	Tea .....	3,519,	5,186,	5,142,	4,910,	4,398,
	Coffee .....	2,718,	1,618,	1,724,	1,127,	1,414,
	Sugar & Molasses	7,501,	7,324,	7,201,	6,775,	5,026,
	Tobacco .....	1,229,	954,	1,216,	544,	444,
	Rice .....	1,121,	860,	475,	264,	873,
	Fruits .....	808,	992,	788,	519,	640,
	Wines .....	3,432,	3,295,	2,966,	2,084,	2,464,
	Spirits .....	1,240,	1,010,	1,643,	1,137,	986,
		21,568,	21,239,	21,155,	17,359,	16,245,
FOOD .....	Grain and Meal.	19,149,	15,601,	12,876,	11,799,	11,979,
	Provisions .....	9,990,	8,320,	7,256,	5,654,	5,399,
		29,139,	23,921,	20,132,	17,453,	17,378,
Remainder of Enumerated Articles ....		16,345,	15,092,	13,258,	5,986,	6,920,
TOTAL ENUMERATED IMPORTS ....		136,613,	131,026,	120,077,	95,890,	86,677,
Add for UNENUMERATED IMPORTS (say)		15,100,	10,900,	9,425,	23,972,	21,669,
TOTAL IMPORTS .....		151,713,	141,926,	129,502,	119,862,	108,346,

\* "Silk," inclusive of manufactured silk, "not made up."

**EXPORTS.—(United Kingdom.)—First Six Months (January—June), 1873-72-71-70-69.**—Declared Real Value, at Port of Shipment, of Articles of BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.

(First Six Months.) BRITISH PRODUCE, &c., EXPORTED. [000's omitted.]	1873.	1872.	1871.	1870.	1869.
	£	£	£	£	£
<b>MANFRS.—Textile.</b> Cotton Manufactures..	30,633,	30,207,	27,299,	27,391,	25,855,
" Yarn .....	7,733,	7,992,	7,092,	7,306,	6,996,
Woollen Manufactures	13,373,	15,986,	12,066,	10,760,	10,840,
" Yarn .....	2,622,	3,403,	2,930,	2,740,	2,771,
Silk Manufactures.....	916,	1,137,	976,	1,203,	1,051,
" Yarn .....	914,	747,	634,	106,	94,
Linen Manufactures ....	3,951,	4,305,	3,589,	3,670,	3,473,
" Yarn .....	1,024,	1,042,	1,149,	1,298,	1,131,
	61,166,	64,819,	55,735,	54,474,	52,211,
<b>" Sewed.</b> Apparel .....	1,629,	1,416,	1,300,	940,	1,148,
Haberdy. and Mllnry.	3,161,	3,159,	2,767,	2,252,	2,229,
	4,790,	4,575,	4,067,	3,192,	3,377,
<b>METALS, &amp;c.</b> ..... Hardware .....	2,428,	2,331,	1,716,	2,175,	2,027,
Machinery .....	4,668,	3,512,	2,407,	2,647,	2,278,
Iron .....	19,167,	16,007,	11,779,	10,651,	9,053,
Copper and Brass.....	1,842,	1,760,	1,402,	1,771,	1,545,
Lead and Tin .....	682,	883,	760,	2,373,	2,336,
Coals and Culm .....	6,411,	3,970,	2,736,	2,616,	2,298,
	35,198,	28,463,	20,800,	22,233,	19,537,
<b>Ceramic Manufcts.</b> Earthenware and Glass	1,749,	1,454,	1,219,	1,285,	1,316,
<b>Indigenous Mnfrs.</b> Beer and Ale..... and Products.	1,383,	1,178,	1,045,	1,111,	1,044,
Butter .....	127,	143,	149,	138,	135,
Cheese .....	36,	37,	48,	51,	45,
Candles .....	96,	112,	87,	56,	88,
Salt.....	360,	217,	232,	187,	201,
Spirits .....	111,	98,	101,	94,	97,
Soda .....	1,426,	1,146,	793,	700,	666,
	3,539,	2,931,	2,455,	2,337,	2,276,
<b>Various Manufcts.</b> Books, Printed .....	388,	368,	296,	278,	304,
Furniture .....	—	—	—	96,	100,
Leather Manufactures	1,708,	1,764,	1,968,	1,218,	1,250,
Soap .....	117,	149,	99,	105,	100,
Plate and Watches ....	128,	81,	104,	219,	234,
Stationery .....	317,	290,	221,	235,	221,
	2,658,	2,652,	2,688,	2,151,	2,209,
<b>Remainder of Enumerated Articles .....</b>	8,397,	7,660,	8,354,	6,291,	5,854,
<b>Unenumerated Articles.....</b>	8,290,	7,049,	6,319,	5,146,	4,705,
<b>TOTAL EXPORTS.....</b>	125,787,	119,603,	101,637,	97,109,	91,485,

**SHIPPING.—(United Kingdom.)—Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the Six Months ended June, 1873-72-71.**

Countries from whence Entered and to which Cleared.	Total British and Foreign.					
	1873.		1872.		1871.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
<b>FOREIGN COUNTRIES.</b>						
Russia { Northern ports ....	225,816	318,229	202,426	286,788	175,951	339,439
Southern „ „ „	215,036	78,806	298,437	122,691	265,071	125,283
Sweden .....	341,359	278,378	339,877	214,366	276,083	177,405
Norway .....	468,765	132,974	416,761	120,423	402,809	113,781
Denmark .....	91,360	244,742	93,155	227,931	65,972	243,114
Germany .....	817,022	973,656	726,798	1,116,549	683,393	1,111,024
Holland .....	408,128	534,354	401,036	508,481	332,770	438,853
Belgium .....	424,182	458,773	393,045	379,892	331,928	372,385
France .....	868,134	1,221,418	803,615	1,257,710	554,381	1,191,379
Spain .....	509,104	296,465	402,381	293,561	316,258	256,487
Portugal .....	168,748	145,492	138,780	127,553	140,934	101,961
Italy .....	130,594	355,268	126,677	370,230	113,032	323,748
Austrian territories .....	11,209	54,200	18,748	99,409	40,075	75,630
Greece .....	38,041	38,594	52,121	32,429	26,147	29,348
Turkey (including Wallachia and Moldavia) .....	139,443	160,655	112,868	200,725	125,833	183,983
Egypt .....	239,895	282,353	255,426	227,776	178,461	252,536
United States of America ....	1,540,895	1,090,571	1,245,304	1,146,968	1,399,270	1,222,749
Mexico, Foreign West Indies, and Central America .....	121,625	204,630	123,547	203,880	93,378	187,788
Brazil .....	120,547	199,143	147,099	186,644	109,102	173,332
Peru .....	120,150	100,647	81,929	118,269	121,033	86,880
Chili .....	37,334	102,260	47,074	93,760	30,204	63,574
China .....	47,261	11,355	55,075	43,759	52,981	38,745
Other countries .....	240,617	305,865	248,553	292,253	189,423	256,964
<i>Total, Foreign Countries</i>	<i>7,325,265</i>	<i>7,588,828</i>	<i>6,730,732</i>	<i>7,672,047</i>	<i>6,024,489</i>	<i>7,366,388</i>
<b>BRITISH POSSESSIONS.</b>						
North American Colonies ....	168,003	305,577	118,174	402,009	188,955	373,080
East Indies, including Ceylon, Singapore, and Mauritius .....	446,611	511,530	506,380	533,075	362,633	505,009
Australia and New Zealand .....	138,553	219,162	141,461	168,339	130,753	136,111
West Indies .....	103,206	86,384	105,593	94,802	119,948	109,562
Channel Islands .....	122,412	80,598	125,055	90,421	118,293	84,635
Other possessions .....	103,125	376,757	93,604	409,159	93,140	295,548
<i>Total, British Possessions</i>	<i>1,081,910</i>	<i>1,580,008</i>	<i>1,090,267</i>	<i>1,697,805</i>	<i>1,013,722</i>	<i>1,503,945</i>
<b>TOTAL FOREIGN COUNTRIES AND BRITISH POSSESSIONS.</b>						
Six months ended June { 1873.....	8,407,175	9,168,836	—	—	—	—
'72.....	—	—	7,820,999	9,369,852	—	—
'71.....	—	—	—	—	7,038,211	8,870,333

**GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—Computed Real Value for the Six Months (January—June), 1873-72-71.**

[1000's omitted.]

(First Six Months.)	1873.		1872.		1871.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
<b>Imported from:—</b>						
Australia .....	4,656,	9,	3,056,	14,	3,419,	9,
So. America and W. Indies .....	1,173,	1,589,	420,	1,211,	708,	1,686,
United States and Cal. ....	1,532,	3,648,	3,798,	2,061,	4,451,	3,145,
	7,361,	5,246,	7,274,	3,286,	8,578,	4,840,
France.....	269,	806,	134,	271,	128,	33,
Germany, Holl. & Belg. ....	15,	133,	399,	1,856,	1,314,	330,
Prtgl., Spain, and Gbrltr. ....	41,	39,	25,	23,	33,	22,
Mlta., Trkly., and Egypt .....	974,	29,	56,	28,	129,	63,
China .....	56,	94,	—	60,	2,	2,028,
West Coast of Africa	40,	—	43,	—	71,	—
All other Countries....	60,	223,	176,	53,	772,	1,372,
<i>Totals Imported....</i>	<i>8,816,</i>	<i>6,570,</i>	<i>8,107,</i>	<i>5,577,</i>	<i>11,027,</i>	<i>8,688,</i>
<b>Exported to:—</b>						
France.....	381,	1,383,	249,	605,	945,	100,
Germany, Holl. & Belg. ....	5,391,	1,100,	1,925,	324,	3,032,	3,447,
Prtgl., Spain, and Gbrltr. ....	2,902,	124,	960,	182,	178,	398,
	8,674,	2,607,	3,134,	1,111,	4,156,	3,945,
Ind. and China (via Egypt).....	808,	1,493,	754,	3,963,	436,	1,057,
Danish West Indies	—	—	—	—	—	—
United States .....	101,	2,	—	—	2,	1,
South Africa .....	187,	39,	879,	72,	216,	1,
Mauritius .....	—	—	—	—	—	—
Brazil .....	104,	—	262,	—	206,	—
All other Countries....	1,375,	806,	3,724,	851,	363,	278,
<i>Totals Exported....</i>	<i>11,249,</i>	<i>4,947,</i>	<i>8,753,</i>	<i>5,997,</i>	<i>5,379,</i>	<i>5,282,</i>
<b>Excess of Imports ....</b>	<b>—</b>	<b>1,623,</b>	<b>—</b>	<b>—</b>	<b>5,648,</b>	<b>3,406,</b>
<b>,, Exports ....</b>	<b>2,433,</b>	<b>—</b>	<b>646,</b>	<b>420,</b>	<b>—</b>	<b>—</b>

## REVENUE.—(UNITED KINGDOM.)—30TH JUNE, 1873-72-71-70.

*Net Produce in QUARTERS and YEARS ended 30th JUNE, 1873-72-71-70.*

[000's omitted.]

QUARTERS, ended 30th June.	1873.	1872.	1873.		Corresponding Quarters.	
			Less.	More.	1871.	1870.
					£	£
Customs .....	4,850,	4,944,	94,	—	4,731,	5,033,
Excise .....	6,287,	6,097,	—	190,	5,462,	5,266,
Stamps .....	2,645,	2,525,	—	120,	2,377,	2,262,
Taxes .....	362,	349,	—	13,	284,	699,
Post Office .....	1,180,	1,200,	20,	—	1,130,	1,170,
Telegraph Service ....	100,	225,	125,	—	170,	140,
	15,424,	15,340,	239,	323,	14,154,	14,570,
Property Tax .....	1,169,	1,604,	485,	—	867,	890,
	16,593,	16,944,	674,	323,	15,021,	15,460,
Crown Lands .....	75,	75,	—	—	75,	75,
Miscellaneous.....	1,013,	1,374,	361,	—	1,740,	773,
<i>Totals</i> .....	17,681,	18,393,	1,035,	323,	16,836,	16,308,
			NET DECR. £712,393			

YEARS, ended 30th June.	1873.	1872.	1873.		Corresponding Years.	
			Less.	More.	1871.	1870.
					£	£
Customs .....	20,939,	20,539,	—	400,	19,889,	21,047,
Excise .....	25,975,	23,961,	—	2,014,	22,984,	22,058,
Stamps .....	10,067,	9,920,	—	147,	9,122,	9,024,
Taxes .....	2,350,	2,395,	45,	—	2,310,	3,769,
Post Office .....	4,800,	4,750,	—	50,	4,730,	4,720,
Telegraph Service ....	890,	810,	—	80,	530,	240,
	65,021,	62,375,	45,	3,691,	59,565,	60,858,
Property Tax .....	7,065,	9,821,	2,756,	—	6,327,	8,445,
	72,086,	72,196,	2,801,	2,691,	65,892,	69,303,
Crown Lands .....	375,	375,	—	—	385,	376,
Miscellaneous .....	3,435,	3,695,	259,	—	4,195,	3,216,
<i>Totals</i> .....	75,896,	76,266,	3,060,	2,691,	70,472,	72,895,
			NET DECR. £369,660.			

## REVENUE.—UNITED KINGDOM.—QUARTER ENDED 30TH JUNE, 1873:—

An Account showing the REVENUE and other RECEIPTS in the QUARTER ended 30th June, 1873; the ISSUES out of the same, and the Charges on the Consolidated Fund at that Date, and the Surplus or Deficiency of the Balance in the Exchequer on the 30th of June, 1873, in respect of such Charges.

## Received:—

	£
Surplus balance in the Exchequer on the 31st of March, 1873, beyond } the amount of the charge on the Consolidated Fund at that date, } as per last account .....	3,575,401
Income received, as shown in Account I .....	17,681,114
Amount received in Repayment of Advances for Public Works, &c. ...	879,885
Total .....	<u>£21,636,400</u>

Excess of the Sums charged on the Consolidated Fund on the 30th of June, 1873, payable in September quarter, 1873, above the Balance in the Exchequer at that date, viz.:—

Excess of Charge in Great Britain.....	£2,019,602
Surplus overcharge in Ireland.....	1,065,444
Net deficiency .....	954,158
	<u>£22,590,558</u>

## Paid:—

	£
Amount applied out of the Income to Supply Services .....	13,581,095
Charge of the Consolidated Fund on the 30th of June, 1873, viz.:—	
Interest of the Permanent Debt .....	£6,079,551
Terminable Annuities .....	256,225
Principal of Exchequer Bills .....	75,700
Interest of       ,"       .....	40,873
The Civil List .....	101,918
Other Charges on Consolidated Fund .....	326,876
Advances for Public Works, &c. .....	731,739
Sinking Fund .....	1,396,581
	<u>*9,009,463</u>
Total .....	<u>22,590,558</u>

* Charge on 30th of June, 1873 (as above).....	£9,009,463
Paid out of growing produce in June quarter, 1873.....	1,007,373
Portion of the Charge payable in September quarter, 1873.....	8,002,090
To meet which there was in the Exchequer on the 30th of } June, 1873 .....	7,047,932
Net deficiency as above .....	<u>954,158</u>

**BRITISH CORN.—Gazette Average Prices (ENGLAND AND WALES),  
Second Quarter of 1873.**

[This Table is communicated by the Statistical and Commercial Department, Board of Trade.]

Weeks ended on Saturday.	Weekly Average. (Per Impl. Quarter.)					
	Wheat.		Barley.		Oats.	
1873.	s.	d.	s.	d.	s.	d.
April 5 .....	54	11	39	1	24	5
,, 12 .....	55	1	39	-	23	5
,, 19 .....	54	7	39	2	23	10
,, 26 .....	54	10	39	4	23	10
<i>Average for April</i> .....		54 11	39 1	23 11		
May 3 .....	54	11	39	5	23	10
,, 10 .....	55	3	38	3	26	3
,, 17 .....	55	10	33	10	24	7
,, 24 .....	56	10	38	4	25	5
,, 31 .....	57	5	37	1	26	11
<i>Average for May</i> .....		56 -	38 9	25 4		
June 7 .....	58	8	38	2	26	2
,, 14 .....	58	4	35	4	27	8
,, 21 .....	58	10	38	9	26	8
,, 28 .....	58	8	36	8	25	11
<i>Average for June</i> .....		58 7	37 1	26 9		
<i>Average for the quarter</i> .....		56 5	38 11	25 12		

## BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the SECOND QUARTER (April—June) of 1873.

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.		
£ Mlns.	1873.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1873. Per cent.
37,46	April 2 ....	11,02	3,98	22,46	26,11	26 Mar. 4
36,86	„ 9 ....	11,02	3,98	21,81	26,29	
36,40	„ 16 ....	11,02	3,98	21,40	26,25	
36,23	„ 23 ....	11,02	3,98	21,23	26,00	
36,23	„ 30 ....	11,02	3,98	21,24	26,16	
35,80	May 7 ....	11,02	3,98	20,80	26,39	7 May 4½
35,33	„ 14 ....	11,02	3,98	20,33	25,98	10 „ 5
34,75	„ 21 ....	11,02	3,98	19,75	25,64	17 „ 6
34,99	„ 28 ....	11,02	3,98	19,99	25,33	
34,87	June 4 ....	11,02	3,98	19,87	25,82	4 June 7
35,06	„ 11 ....	11,02	3,98	20,06	25,02	11 „ 6
36,06	„ 18 ....	11,02	3,98	21,06	24,89	
36,49	„ 25 ....	11,02	3,98	21,49	25,28	

## BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES.	Assets.				Totals of Liabilities and Assets.
Capital.	Rest.	Deposits.	Seven Day and other Bills.	(Wdnsdys.)	Securities.	Reserve.				
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1873.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,78	15,86	19,74	,40	April 2	13,38	28,81	11,35	,79	54,33
14,55	3,15	12,65	21,59	,40	„ 9	13,38	27,55	10,57	,84	52,35
14,55	3,16	12,18	20,77	,33	„ 16	13,38	26,64	10,15	,83	51,00
14,55	3,18	12,45	20,71	,35	„ 23	13,38	26,76	10,23	,88	51,25
14,55	3,17	12,76	19,31	,39	„ 30	13,38	26,81	10,07	,93	50,18
14,55	3,18	12,64	18,13	,42	May 7	13,38	25,27	9,41	,87	48,93
14,55	3,20	12,57	18,56	,39	„ 14	13,38	25,70	9,35	,83	49,27
14,55	3,21	12,36	17,81	,39	„ 21	13,38	24,86	9,11	,97	48,33
14,55	3,18	12,78	17,00	,36	„ 28	13,38	23,96	9,66	,87	47,87
14,55	3,17	13,47	17,18	,45	June 4	13,40	25,61	9,05	,77	48,83
14,55	3,18	13,30	16,86	,41	„ 11	13,40	23,87	10,04	1,00	48,30
14,55	3,19	13,19	16,54	,38	„ 18	13,40	22,50	11,17	,79	47,85
14,55	3,21	12,64	16,49	,35	„ 25	13,40	21,85	11,21	,78	47,24

## LONDON CLEARING; CIRCULATION, PRIVATE AND PROVINCIAL.

The London Clearing, and the Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday in each Week during the SECOND QUARTER (April—June) of 1873; and in SCOTLAND and IRELAND, at the Three Dates, as under.

[0,000's omitted.]

ENGLAND AND WALES.					SCOTLAND.				IRELAND.		
DATES. Saturday.	London: Cleared in each Week ended Wednesday.*	Private Banks. (Fixed Issues, 3,93).	Joint Stock Banks. (Fixed Issues, 2,74).	TOTAL. (Fixed Issues, 6,66).	Weeks ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35).
1873.					1873.						
April 5	£ 136,02	2,71	2,53	5,24		£	£	£	£	£	£
," 12	109,07	2,80	2,54	5,34							
," 19	79,21	2,74	2,50	5,24	April 19	1,77	3,52	5,28	4,04	3,23	7,27
," 26	139,68	1,73	2,50	4,23							
May 3	112,54	2,75	2,51	5,27							
," 10	109,30	2,74	2,50	5,25							
," 17	98,59	2,71	2,48	5,19	May 17	2,01	3,71	5,71	4,16	3,13	7,29
," 24	141,83	2,60	2,44	5,10							
," 31	95,09	2,64	2,41	5,05							
June 7	126,62	2,63	2,38	5,01							
," 14	91,73	2,58	2,34	4,92	June 14	2,12	3,96	6,06	3,98	2,94	6,93
," 21	131,65	—	—	—							
," 28	103,83	—	—	—							

\* The Wednesdays preceding the Saturdays.

## FOREIGN EXCHANGES.—Quotations as under, LONDON on Paris, Hamburg and Calcutta;—and New York, Calcutta, Hong Kong and Sydney, on LONDON.

1  DATES.	2  London on Paris.	3  London on Hamburg.	4  New York.	5  Calcutta.		7  Hong Kong.	8  Sydney.	9  Standard Silver in bars in London
				6  India Council.	At Calcutta on London.			
				3 m. d.	60 d. s.			
1873.				per. cent.	s. d.	s. d.	s. d.	per cent.
April 8 .....	25·85	20·54	107 $\frac{3}{8}$	1 10 $\frac{7}{8}$ *	1 11 $\frac{7}{16}$	4 5 $\frac{1}{2}$	{ $\frac{1}{2}$ dis. to $\frac{3}{4}$ pm.}	d.
," 22 .....	25·82 $\frac{1}{2}$	20·52	108 $\frac{1}{2}$	1 10 $\frac{3}{4}$ *	1 11 $\frac{5}{16}$	4 5 $\frac{1}{2}$		59 $\frac{3}{4}$
May 6 .....	25·77 $\frac{1}{2}$	20·52	108 $\frac{3}{8}$	1 10 $\frac{1}{4}$	1 11 $\frac{3}{16}$	—	—	59 $\frac{3}{8}$
," 20 .....	25·95	20·55	, $\frac{3}{4}$	1 10 $\frac{3}{8}$	1 11 $\frac{1}{8}$	—	—	„ $\frac{5}{16}$
June 10 .....	26·0	20·57	109 $\frac{1}{8}$	1 10 $\frac{3}{8}$ *	1 11	4 6 $\frac{1}{4}$	{ $\frac{1}{2}$ dis. to $\frac{3}{4}$ pm.}	59 $\frac{7}{16}$
," 24 .....	25·95	20·56	, $\frac{1}{4}$	1 10 $\frac{3}{8}$ *	1 11 $\frac{1}{16}$	4 6 $\frac{1}{4}$		„ $\frac{5}{16}$

\* Banker's drafts.

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## JOURNAL OF THE STATISTICAL SOCIETY,

DECEMBER, 1873.

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INAUGURAL ADDRESS *delivered at the SOCIETY's Rooms, 12, St. James's Square, London, on TUESDAY, 18th November, 1873. By the PRESIDENT, WILLIAM A. GUY, Esq., M.B., F.R.S.*

THIS is the opening day of our Fortieth Session, and in accordance with a recent precedent, and the example of my immediate predecessors in office, I have the honour to submit to you my sessional address.

My first words must be words of congratulation on the prosperous state of our affairs. For several years past our numbers have been steadily on the increase; during the last two Sessions the addition has been very considerable; and you will infer from the number of new names brought forward for election this evening, that the cause of this recent increase, whatever it may have been, has not yet spent its force. Let me add, that those who insist that the facts of the Statist should be not only counted but weighed, must be gratified to learn that among the names lately added to the list of our Fellows, are to be found some of the most distinguished members of both Houses of Parliament. From this exalted source we have always drawn no inconsiderable fraction of our constituency. It was nearly a seventh part of the 400 Fellows inscribed on our list in the year 1835; it is as nearly as possible an eighth part of the 500 whose names now stand on our books. I will enter into further detail so far only as to say that, while the members of the Upper House have more than doubled, those of the House of Commons have somewhat fallen off—a fact in part due to the circumstance that several of those who joined us originally as Members of Parliament, have passed to the House of Lords by creation or succession. This is true of more than one of our past presidents.

Among the causes which have brought about this recent addition to our numbers, the most influential (and it is one that I have great pleasure in mentioning), has been the earnest, persevering, and well directed efforts of my predecessor—Dr. Farr. He rightly judged that there were many most distinguished persons outside our ranks, who only had to be reminded of what this Society has

been doing during the last forty years, and what more it would be able to accomplish, if its resources were increased, to induce them to offer themselves as candidates for admission. In this belief and expectation he has not been disappointed. But though our claims to increased support have been thus willingly acknowledged, this could scarcely have happened had it not been for what I may call a gradual education and preparation of the public mind to see in the Statistical Society something better than a mere agency for the gathering together, storing, and arranging of facts. Some such idea as this did certainly prevail among the founders of our Society, and it has found occasional expression at our ordinary meetings; but with us, as with others, a law of development has been at work, and we have come, by degrees, to understand better both ourselves and our mission.

I have just spoken of an increase of numbers: but in every well managed society, as in every well ordered government, increasing numbers bring with them increasing wealth. To this rule our Society forms no exception. Our income has grown in at least equal proportion with our members; we are slowly accumulating capital; and through the liberality of Sir Francis Goldsmid and Sir Charles Dilke, we have been able to lay the foundations of a building fund. These first donations to the fund have been the most notable, but by no means the only good results of our late abortive effort to improve our position by associating with us other scientific societies which, like our own, stand much in need of improved accommodation, and like us, have hitherto received no aid from the State.

There is another result of our recent failure to obtain for ourselves and others the better and more permanent accommodation of which we stand so much in need, that may possibly prove advantageous to us. I mean the publicity given to our wants both within and beyond the limits of our own Society. In how many ways this publicity may work in our favour, I will not detain you by attempting to point out. May be we shall hear of some house that we can contrive to purchase or lease, may be of some site on which to build; and, though unlikely, it is not impossible, that we may profit by some act of liberality, of which so many examples are furnished every day in this wealthy, liberal, and (shall I venture to call it) eccentric, community. Let me add, that the Society has still before it the two alternatives: of the adaptation of some house in this immediate neighbourhood, to be held under a long lease; or the erection on a remoter site (say at Westminster) of a home built after plans adapted to all our wants, on a freehold of our own.

But there is still another result of our late effort, which all who took a warm interest in its success may regard with unmixed satis-

faction. They learnt, what they could not have been taught so well in any other way, with what liberality the Fellows of this Society and of the Institute of Actuaries, with whom we are so closely associated, were prepared to respond to our appeal; and I cannot but think that if we had relied less on other societies, and been content to put forth a more moderate programme, we should have obtained all the support we needed to carry our undertaking to a prosperous issue.

But it is well known to all our friends and well wishers, that we have had to contend with a very serious obstacle placed in our path by the departure of the Government from its old policy of helping those societies that have in times past either done honour to the nation, or voluntarily assumed some function which must otherwise have been discharged by the State itself. The help thus given, took the substantial form of buildings with libraries, museums, meeting rooms, and even residences; and it cannot be matter of surprise that scientific men, as a class, with the accommodation afforded in Somerset House, and now preparing in Piccadilly, present to their minds, should allege that to extend a like accommodation to such societies as this is both a duty and a privilege of the Government; and that they should discourage, oppose, and even resent such efforts as we have just made to help ourselves, as tending to weaken the force of the appeal they were prepared to put forward on our behalf. To this feeling, then, directly, and to the action of the Government, more remotely, we may certainly trace one cause of our want of success. Let us hope that the support we could not conciliate by our effort to help ourselves, we may yet secure by our failure.

In speaking just now of recent accessions to our numbers, I omitted to notice the losses we have lately sustained. This year, I am happy to say, it does not fall to my lot to chronicle the death of any Fellow who had held amongst us such a foremost place as that filled by Charles Babbage or Colonel Sykes, to whose great, but widely different, merits my predecessor, Dr. Farr, did ample and discriminating justice a year ago. Of the eighteen Fellows since removed by death, I may, however, mention that no less than six belong to the fast decreasing list of those whose membership dated from the very foundation of our Society. Two of these, Charles Knight, a veteran soldier in the good cause of literature and education, and an author of no mean merit, and the venerable Stephen Lushington, claim special notice. To a different category belong the names of Lord Wolverton, Sir David Salomons, and Sir William Tite; and I have to mention with special regret the loss we have sustained by the death of Professor Waley, who had barely entered on his duties as one of our secretaries; when he was

disabled by the sickness from which he was not to recover. If the name of Bishop Wilberforce, formerly a Fellow of our Society, had remained on our list at the time of his death, it would have been my duty to attempt the difficult task of doing justice to the untiring energy and genial character of him who derived his business habits, his eloquence, and his powers of conversation, by direct descent from one who is the object of our affectionate remembrance as philanthropist, orator, and wit.

Turning again from these sadder thoughts to the more agreeable topic of the recent additions made to our numbers, and the consequent increase of our resources, I recognise in them both a constraining motive and the means whithal, to new exertions whereby our Society may be made an instrument of greater usefulness both to its own members and to the world at large.

On referring to the circular issued on the 25th of last March in the name of the President and Council, and signed by the secretaries, I find the present time spoken of as favourable to the reconsideration of the scientific work of the Society, the extent and character of its library, and its published transactions. In the opinion thus expressed I cordially concur, and will presently, with your permission, offer a few remarks on the three topics thus briefly indicated. But before doing so, let me call your attention for a moment to the last annual report of the Council, and the indications it affords of renewed life and activity on the part of our governing body. At our last general meeting the Fellows were asked to sanction a revision of our rules, carefully prepared by the Council, and among other changes, to agree to the appointment of an *Executive Committee*. Those of us who have experience of the inconvenience attending the consideration by a large, and necessarily fluctuating, body, of the minor details which make up so much of the daily life of a society, will see in this change an earnest of increased activity. The Executive Committee, by relieving the Council of the details of management, will give it more time for considering the weightier matters belonging to their jurisdiction. The scientific work of the Society, the library, and the published transactions will, doubtless, be made to feel, each in turn, the force of this new arrangement.

And now I ask your attention to the three distinct matters thus brought under our notice—our library, our transactions, our scientific work; for it is in this order that I propose to consider them.

1. The *Library* of a society which has the large aim and wide scope implied by the word "*Statistics*," must in course of time attain to very large dimensions. Already our own library has outgrown the accommodation we are able to afford it; and this fact alone must plead strongly in favour of larger and more commodious premises. For, be it recollect, our shelves must be made to hold

a large and constantly increasing number of bulky publications issuing year by year from the teeming presses of every colony and every civilised government under the sun; as well as the transactions of many learned societies; and works in several languages on statistics, and on such allied topics, as social science, in the largest acceptation of that term, political economy, and the like. Provision, therefore, must ultimately be made for a large proportion of the reports and returns issued by our own Government, for the similar publications of Foreign States, and for the monographs of our own and of other countries. In order to render thoroughly available the literary stores we have already accumulated, the Library and Executive Committees must exert themselves to bring about the best possible arrangement of our books themselves, as well as the most complete catalogues that can be compiled in the two recognised forms of *name* and *subject*. Much attention has already been given to this important matter by the Library Committee; and we may confidently reckon on the continuance of the valuable services of Mr. Ernest Seyd and his colleagues.

2. Our *Transactions* (the next topic to which I invite your attention) are contained in thirty-six volumes of our *Journal*, each consisting of four quarterly parts.\* Of the thirty-six volumes, twenty-five have been furnished with an elaborate printed index. In these thirty-six volumes, and in the thin quarto first issued by the Council, we possess a complete history of the Society's operations during the forty years that it has existed. Need I say that we may find in our *Journal*, if we seek for them, strong indications of the changes and developments that have taken place in our views of the function which, as a learned society, we have undertaken to discharge.

Eight years ago I invited the attention of our Fellows to some of the leading facts connected with the origin of our Society. I pointed out, as worthy of special notice, the cautious, and even timid, spirit which presided at its birth. We came into existence within two years of the passing of the Reform Bill, at a time when party spirit still ran very high, and the first care, and constant effort, of our founders, was to keep our proceedings unspotted by politics. We were to dwell apart, in a region peopled by facts, from which opinion was to be jealously shut out, lest it should contract the taint of party. We chose a crest and motto in perfect keeping with our professions. But this state of isolation did not last long. Every attempt we made to throw light on the "condition" and prospects of society," by gathering and binding up together the facts relating to the social life of the nation, brought us in contact with opinion. These facts—how was it that they came to

\* My friend Mr. Purdy has reminded me that from May, 1838, to April, 1839, our *Journal* was issued monthly.

be facts at all? How did they come to be what they were? What were their antecedents, what their relations to other facts? Would they continue what they were, or would they undergo changes and transformations? Our founders professed to deal not merely with the *condition*, but with the *prospects* of society. Its condition was a matter of fact: but its prospects a matter of uncertainty—necessarily an inference from the past, necessarily a speculation as to the future; behind us history, before us progress; all around us development and change. If our facts related to the resources of the State, to the results of an existing system of taxation, which of our taxes, measured by pecuniary results, by charge of collection, by outlay of time, by influence on morals, ought to be condemned, which commended? If the condition of some distinct section of the people were the matter under consideration, say of the multitude called poor, of the hordes recognised as destitute, of the huge stagnant mass stamped with the name of paupers, of the busy, troublesome, dangerous, costly throng branded as criminals; of what use to society, of what interest to us, could be the bare figures that set forth their numbers and their distribution? These dead bones must be clothed with the flesh of circumstance, and be made to breathe the breath of opinion, ere they could be said to live. To rest satisfied with the bare facts would be to substitute the study of osteology for anatomy, a museum for a science. What man possessed of sense, curiosity, or fancy, could gaze unmoved on this mixed mass of poverty, destitution, and crime, which makes up the lower stratum of our artificial society? How resist the question, what part of all this misery is the result of personal defects and vices—of sloth, unthrift, intemperance, incapacity; how much of slovenly habits, of dole-giving in the rich and less poor, how much of what may be called inaptitude in the State! How is it possible to resist the inquiry whether when, more than three centuries ago, our ancestors established a poor law, they ought not rather to have given us a good police force. May not this mistake (assuming it to be such) have proved the perennial source of countless evils? Again, how hard it is to refrain from raising that other question, whether much of what we now suffer may not have originated in that old simple view, so convenient to the poet and painter, so remote from the sober truth of things, that could see in society but two classes—the rich, mostly oppressors, the poor mostly oppressed: on the one side purple and fine linen, on the other rags. One function of this Society, perhaps its highest, is to substitute for the convenient simple language of poetry, wherever we find it, the more exact, though more perplexing, language of figures, displaying social life in all its complicated reality, rising from destitution and its associate crime, through pauperism, and poverty, and the

almost infinite variety of conditions summed up in the one word competence, to wealth in its many degrees and forms, associated with rank, or dissociated from it.

Some such thoughts as these were probably present to the minds of the founders of our Society; but, be this as it may, the Council, in their Sixth Annual Report, published in the third volume of our *Journal*, did, in their collective capacity, lend their sanction and support to a most comprehensive (I may almost say revolutionary) exposition of our objects and aims. Having had "a six years' "experience," and profited by it, they had come to recognise the prevailing opinion, that "Statistics embrace all the physical sciences "to which a *numerical method* is applicable," as a "very common "error," to denounce as a degradation the *rôle* that had been assigned us of perfecting "the art of 'tabulating'" and of acting as "hewers "and drawers to those engaged on any edifice of physical science." Our function was something higher, better, and more attractive than this—"it was that we should ourselves be the architects of a science "or of sciences, the perfecters of some definite branch or branches of "knowledge, which should do honour to ourselves and our country, "and at the same time to the distinguished men who summoned us "to the labour;—the elaborators, in fine, of truths which we feel "to be necessary to our happiness, but which are yet hidden from "us, or but partially revealed."

Thus early in the history of our Society did the Council show their appreciation of the work it had undertaken; and I am sorry that eight years ago, when I had occasion to treat of the proper functions of a Statistical Society, I omitted to refer to the early volumes of our Transactions, and so lost the support to my views which this report of the Council of that day would have afforded them. I was not then aware of the extent to which I had been anticipated.

But this Report of the Council to which I have been referring does not seem to have left behind it any permanent impression. The old notion that our Society existed for no other object than to create a store-house of tabulated facts, that we had nothing whatever to do with opinions, cropped up over and over again, and though it might be thought to have disappeared, never to reassert itself, when, in 1858, the old motto of the Society "*aliis exterem-dum*," dropped from the emblematic wheatsheaf, it found for itself an indignant utterance only eight years ago. But neither before nor after that date did we ever abuse our liberty of speech, or descend from our lofty position of impartiality to mix in party politics. Even during the last Session, when Mr. Martin's able paper on the Purchase of Railways by the State, gave rise to the longest discussion that has yet taken place within these walls, no one thought of

accusing us of any party preference, though there were some who doubted the expediency of making this topic an exception to the general rule of our procedure.

But whatever doubts may have been entertained respecting the proper objects of our Society, and the precise limits of our studies, certain facts were made clear by the actual practice of the Society itself from the earliest days of its existence. We did devote ourselves with great earnestness and success to the study of the *condition of society*, and of that section of it which it was most important and most difficult to understand—the working classes and the poor. The duty of inquiring into their real condition, and the disabilities and disadvantages under which their poverty placed them in regard to health and comfort, and education, intellectual, moral, and religious, was entrusted to a succession of active committees, whose reports form the most valuable contents of our earlier *Journals*. And these reports, be it observed, did not relate only to the condition of the poor in London and Westminster. The influence of our example, the force of our initiative, was felt throughout the large towns of England, far and wide, and penetrated even into the rural districts. Similar committees, setting on foot like inquiries, were formed in them, and their reports, too, enriched our pages. These inquiries were largely carried on by paid agents carefully selected for the work, and the expense was in more than one instance wholly defrayed or liberally supplemented by the Earl of Harrowby (then Lord Sandon), Henry Hallam, Mr. James Heywood, and Mr. Slaney. These inquiries were conducted after the method of which John Howard a century ago set the example in the prisons of England. The district, civic or rural, selected for inquiry, was, so to speak, exhausted by a house-to-house visitation, and, in some instances (as in that of Church Lane, St. Giles's), every apartment in every house, and every individual of both sexes and every age, were passed under review. This inquiry, which took place in 1848, was the last of the series to which it belonged; and may be said to have brought to a fitting conclusion a most valuable succession of labours by which our Society amply fulfilled its early promise of making the *condition and prospects of society* a chief object of attention and study.

The early numbers of our *Journal* also presented a feature which has for many years past disappeared from our pages. I mean lists of the statistical papers printed during the current sessions of Parliament. This fact may perhaps be found worthy of the attention of the Executive Committee.

Another fact which should be noticed in connection with the character of our Transactions, is the complete disappearance of such papers as that contributed to an early number of our *Journal* by

Dr. Hutchinson. It was an elaborate statement of the results of his experiments with an ingenious instrument of his own invention, known as the Spirometer. The paper abounded in figures, but its claim to be deemed statistical would now be disputed. If it had such claim, it owed it to the possible application of the instrument to the selection of recruits and of lives for assurance. The paper of Mr. Benjamin Phillips on the mortality after amputations, may be mentioned as a communication of the same order, which would now be deemed open to objection, as being numerical, but not therefore statistical.

The principal contents of our *Journal*, in importance if not in bulk, have always been, and must continue to be, the papers read at our ordinary meetings, to which we have recently added a brief notice of the discussions which they provoked. But we have also found place for some of the leading communications made to the Statistical Section of the British Association, including the addresses of its successive presidents, and for many original papers derived from various sources. Our earlier *Journals* contained several brief notices, or reviews, of statistical monographs, but for these we have not lately been able to find room. Nor have we failed to place on record the proceedings of the successive Congresses held in the capital cities of the principal European States; always under the most exalted patronage—a proof, if any were needed, that in all nations statistics are accepted as matters of the highest public interest, as a kind of knowledge which it behoves all Governments to encourage and promote. Having provided in the pages of our *Journal* for the papers read at our ordinary meetings, for the reports of the Council, for the addresses and some of the papers read at the Statistical Section of the British Association, and for some notice of the proceedings of Statistical Congresses, we still found space for abstracts of various periodical returns, which, with short statistical papers from various sources, constitute our *Miscellanea*.

I should run the risk of wearying you, if I were to enter into more minute details respecting the composition of our *Journal*. What I have said on the subject has been prompted by my knowledge of the earnest desire that exists among the Council and the Executive Committee to bring about such improvements in its form and contents, as, on careful consideration, may be deemed possible. Some practical steps have been already taken in this matter; but the time has not yet arrived for submitting the results to the Fellows. The leading questions which must engage attention will necessarily be such as these:—Shall the existing form, and existing times of publication be retained? If so, shall we aim at supplementing the *Journal* by other periodical or occasional issues? Might not an attempt be made to collect and publish what may be

termed *Statistical Constants*, or Standards of Comparison, arranged in forms easy of reference; and might not this take the shape of an annual publication? May not the object we have in view be brought about by occasionally treating as an extra part some elaborate *compilation* or *essay*, such as the Report on Beneficent Institutions, the admirable Prize Essays, which responded to the liberality of Mr. Tayler, or, to give a more recent example, the Paper on Railroads, which lately gave rise to so animated and interesting a discussion. This paper has indeed been so treated, and affords a good example of what I mean. With valuable additions by Dr. Farr, Captain Tyler, and Mr. Chubb, and some miscellanea, it forms in itself a most acceptable contribution to the literature of railways.

But if changes in the direction of improvement in our *Journal* are to be carried into effect, another question will have to be carefully considered: I mean the agency by which the new and improved system must be worked. Will the plan on which we have been acting for the last forty years meet our new requirements? Can we ask one of our secretaries to undertake so considerable a labour, so continuous and sustained an effort? This, and the other questions I have hinted at, will have to be most carefully considered with a view to a steady, permanent increase of the service which our *Journal*, as the organ of a scientific society, professes to perform.

3. The third topic to which I promised to invite your attention, is our *Scientific Work*. The document to which I referred in the early part of this address, speaks of the present time as favourable to the reconsideration of the scientific work of the Society. It is clear from these words that those who wrote and those who signed and sanctioned that document, did not doubt that this Society has a *scientific work* to do. But I need not tell you that this view of matters is not shared by many who stand outside our circle, and, as lookers on, think that they understand our own affairs better than we do ourselves. These severe critics will not allow any convenient opportunity, such as a meeting of the Social Science Association, to pass, without raising the question whether such a thing as social science does actually exist, or is in course of formation: and the same question, as to our own scientific pretensions has been raised over and over again. Now if this inquiry and criticism were merely a sort of literary exercise, it might be disregarded; but it is something more than this. The answer to the question whether the name of science is rightly assumed or not, is usually coupled with depreciatory remarks on such pursuits as those in which this Society is engaged; and work of this order has even been represented as useless; as ending, where it begins, in words; as having no practical result,—no useful influence on the condition and prospects of society.

Taking then this adverse criticism together with the depreciatory remarks which accompany it, as indicating a prepossession on the part of the public unfavourable to such work as that which this Society is doing,—I think I cannot do better than devote some part of this address to a further inquiry (for this is not the first time I have handled the subject) into the real merits of this question, on the right understanding of which part of the usefulness, and something of the dignity, of this Society depends.

Let me premise that the name assumed by this Society has never exposed it to hostile criticism. The word science does not figure in our title. Though we have from the first cultivated social science, if by this is meant a study of the condition and prospects of society, we have not, in direct terms, taken the credit of so doing. It is otherwise with the Association which may be said to bear to this Society the same relation that the British Association does to the Royal Society. It has assumed the name of *Social Science*, not, I suppose, wholly with a view of asserting its scientific character, but because it has found it more convenient to speak of a Social Science Association, than of a Society for the Promotion or Propagation of Social Knowledge. It is by this very natural use of the word science that the Association lays itself open to hostile criticism. We invite it in another way; for we are found from time to time asserting on our own behalf that we are not merely collectors of facts, but veritable cultivators of a science. We speak of *scientific work*, of *scientific methods*, of *scientific aims*.

Let us see how far such expressions as these can be justified. We must begin by admitting the simple fact that though Science is a word that carries with it the idea of knowledge in the most definite and exact form it can be made to assume, and that, therefore, science is one, sciences are many, and scientific methods various. There is one science of the stars, another of the mind of man; one science of lifeless, another of living, things; one science of matter in the mass, another of matter in a state of disintegration and recombination; one science of man as a living unit, another of man as compared with man in various stages of development and civilisation; another still of man as a member of a civilised community, losing his individuality among the multitudes of his fellows. If this last-named study of man in the aggregate, of man as he lives and moves among his fellow men, is to be denied the name of science, we ask on what ground? If science, to be science, must have a large scope, a definite object, an exalted aim, which of these do we lack? If science, to be science, must deal more or less largely in figures and in calculations based upon figures, no one can allege that we are deficient in this respect. If science is to be known as science by the worth of its practical applications, all men know that we aim

at nothing less than the 'improvement of man's estate' through an ever-increasing knowledge of man's true condition, and of all the causes which raise or lower it. If we are not to be denied the name of science on any of these grounds, as falling short in any of these particulars, is it because the objects of our study are wanting in the great element of stability, because the man who is numbered among the living to-day may be dead to-morrow, because the city of to-day may have been the village of ten years ago, because the men, women, and children who but a few days' since were scattered through the homes of a country, may be seen to-day mustered on the shore, to-morrow afloat upon the sea, a fortnight hence absorbed into the scant population of a distant colony, or lost among the millions of an independent and alien nation? or, is it, on the other hand, because we cannot make application to the individual of the truths we establish respecting the mass? I believe that both these considerations will be found to lie at the root of the objections urged against us when we claim a place among the sciences.

Let us examine these two objections (admitting them to be such) in turn. With regard to the first, I observe that if we cannot do anything to alter the character of the facts with which we deal; if we cannot arrest fluctuation or put a stop to change, we can resort to the obvious artifice of taking note of our facts at some given point of time. We may photograph the fleeting picture with all its details. We do this every tenth year when we take a census of our population, we do it for every day in the year when we bring together into one return the scattered records of births, deaths, and marriages, each entered at the date of its occurrence. And here let me observe incidentally that what is thus done for the nation may be done also, and is being done on a large scale, for the several classes of which the nation consists. We have several such successive returns of paupers, and we have had two similar returns of convict criminals; and I venture to suggest that though an annual census of our entire population may be reasonably objected to on the ground of expense, no such objection need lie against an annual, or even six-monthly census (one in the height of summer, one in the depth of winter) of the population of our workhouses, prisons, almshouses, lunatic asylums, and hospitals.

But this is a digression. I had to notice a second objection to our claim to be called a scientific body; namely, that we cannot apply to the individual the truths we are able to establish respecting the mass. This is literally true; but here again we are not without resources, at least in all those cases in which, as in the several forms of insurance, of life, health, and property, we re-apply to similar, and sufficiently numerous, groups the facts and figures previously obtained from some one group carefully selected as a standard.

It will be seen then that in the guise of Censuses of the population and of the several classes of which it consists, and in returns and tables of mortality, we have true scientific elements applicable to some of the most interesting problems, some also of the most praiseworthy and beneficial actions of our social life. And if it is still objected that censuses and tables of mortality are not scientific because not exact, the reply is obvious, that if exactness be the true test of science, there could have been no applied science of any sort in the days when the instruments of measurement, now brought to such curious perfection, were crude, coarse, and inexact.

But of a truth, when men speak of those branches of knowledge to which they most willingly accord the name of science, they mean distinct subjects of study into which, like fertilising streams gradually making their way over an unproductive territory, the pure waters of well ascertained fact gradually force their way. It is in this sense, if in any, that there may be said to be a Science of Medicine, or a Science of Geology; and in this sense, if in any, there may be said to be a Science of Statistics—a Science of States—a Science of Social Life.

If we would learn how far knowledge of the more exact order has made its way into the region which we cultivate, and what room there still is for the extension of scientific work, we may consult with advantage the pages of our *Journal*. It abounds in examples of the scientific correction of errors or half truths, of which I will venture to submit to you a notable example.

When Sanitary Reform was in its infancy, or, to speak more correctly, when the great unconscious movement of the eighteenth century was revived in this, and took the form of an association making appeal to the public for support, those who threw themselves most heartily into the work startled the public with figures which exhibited the widest possible differences between rich and poor, and between the inhabitants of the districts which the two classes occupied. The rich and the inhabitants of the better districts attained, one with another, a much more advanced age than those who filled the lower position and lived in the meaner quarters. The figures themselves were correctly abstracted, the classes submitted to comparison sufficiently distinct and defined, but in the case of the classes the inmates of workhouses were inadvertently detached from the working class, of which, with rare exceptions, they formed a part, while, in the case of the districts, the element of the ages of the population, which no one having the knowledge and training of an actuary would have omitted, was left out. These errors, having found expression in the pages of our *Journal*, were promptly corrected by an actuary, Mr. Neison, who introduced the

needful element of the ages of the living population, and so largely reduced the disparity between classes and districts.

A similar method of correction was subsequently applied by the same author to crime and criminals, and the pages of our *Journal* were enriched by a series of contributions which derived no small part of their value from the element of pure science which they contained.

In this instance science was employed as a corrective. Among other instances in which it was used in the same way, I may mention a paper by Mr. Hallam, in the seventh volume of the Society's *Journal*, in correction of an error made by the Irish Census Commissioners respecting the tendency to marriage at different ages in town and country; and one in the same volume by Dr. Turnham, in correction of certain statements made by Esquirol respecting the relative liability of the sexes to insanity.

But the use of science has not been limited in our experience to the correction of obvious errors. It has, if I may use the expression, leavened the whole mass of the valuable matter contributed to our *Journal* by those of our Fellows who have shown the greatest industry in this way. Take as an example the long list of valuable papers contributed to our *Transactions* by Mr. G. R. Porter, in the interval between 1838 and 1852, in which latter year he, with our indefatigable and faithful honorary secretary, Joseph Fletcher, passed away—take these papers of Mr. Porter as an instance in point, and we must admit that the leaven of science—of true knowledge—did work with effect in all he wrote. Or take the valuable series of papers contributed by Mr. Danson between the years 1847 and 1862, chiefly on commercial and monetary questions: they are throughout characterised by true scientific insight and sagacity. Let us hope that this series is only interrupted, not brought to a close.

I purposely limit myself to these examples, taken from the papers either of deceased members or of Fellows who have for some years ceased to contribute to our *Journal*. But it would be easy to point out among the papers of current contributors, striking examples of scientific treatment, which would not suffer by comparison with those I have just cited.

It will, I trust, be understood that in thus commending those contents of our *Journal* that are best entitled to the praise of scientific treatment, I by no means wish to undervalue those communications to the Society of which the chief merit is the complete representation they give of the condition of some nation or community in present or in past times. Such contributions to what is history for us, and will in its turn become history to those who follow us, must always prove most acceptable. Our *Journal*, indeed,

could not have attained the place it now holds in public estimation, if it had not made provision for the wants and tastes of more classes than one; if it had not had a strong colonial and foreign element mixed up with the mass of English material that must needs constitute its staple.

Assuming that we are justified in speaking of ourselves as a scientific body, with social man as our subject, and the most exact and precise knowledge attainable as our aim; what, it may be asked, can we do to perfect this scientific work? The time is deemed favourable to the reconsideration of the scientific work of the Society. What do these words mean? I take them to point to a larger introduction of the scientific element into all the work we do, into the papers read at our meetings and published in our *Journal*, and into the miscellaneous contents of this, the true mirror of our intellectual self. Now the scientific element of which I am speaking, is nothing else than the principles of the numerical method, of the logic of large numbers, seeking their application, as tests and correctives of all the numerical statements (tabulated or untabulated) which are brought before us. This division, or section, of universal logic has not yet, I venture to think, received the attention it deserves. It is certainly not adequately treated even in the comprehensive work on logic of John Stuart Mill. I would instance the hitherto imperfect treatment of the principle involved in the known reproduction year by year of like figures as representing great social phenomena, such as crimes, murders and suicides, diseases organic and zymotic, births, deaths and marriages, production and consumption, imports and exports. As yet we have scarcely gone beyond the statement of the general fact, the announcement of the principle. We have not sufficiently tested its truth; we have not sought out the class of facts respecting which it is true, the class (if any) in reference to which it is less true or even quite untrue. We have not determined how far the phenomenon is influenced by the number of recurring facts, how far by the character of the facts themselves. We have included under one category, as ruled by the same principle, such different events as zymotic maladies, which fluctuate from year to year more largely and more violently than any order of facts of which I have any knowledge, and occurrences marked by such small annual variations as marriages or births. And though we know that the strange absence of annual fluctuation which certainly does characterise some facts, has been confidently employed as an argument against the very existence of a will in man, no serious attempt has yet been made by any member of this Society to place this matter before us in its true light, and the subject of periodical recurrences or repetitions of the same figures in all its fulness. I do not mean to say

that this interesting subject has been wholly neglected, for I have myself more than once referred to it; but of it, as of the whole subject of the numerical method, it may be safely affirmed that our Society has not yet done all that might have been expected from it.

Much also yet remains to be done to improve the powerful means of illustration and instruments of research which we possess in the tabular forms that are for us what the instruments of the chemist, or the apparatus of the natural philosopher, are for them.

Again, there is little, if anything, to be found in the pages of our *Journal* on the use of symbols; and no account has yet been given of the ingenious suggestions of Dr. Todd, of Brighton, relative to the analysis of compound facts, and the construction of the analytical *tabulæ inveniendi* of Lord Bacon.

It is therefore to the improvement of our scientific methods and their ever increasing application, as correctives of error, to the order of facts with which we deal, that we must look for the increase of our reputation as a scientific society. And, let me add, that in the papers which we select for reading, and in the *Journal*, which is the representative to the outer world of our true function and aims, it ought to be our earnest endeavour to sustain the scientific character to which we have always laid claim. It ought, I think, to be our ambition to take and maintain the same high position in relation to the several societies which deal with human interests that has so long been conceded to the Royal Society in respect of the cultivators of physical science. We should thus become more and more the scientific centre towards which would gravitate all who are prepared to make the sacrifice of time and thought required of those who prefer laborious truth to easy speculation. Outside this narrow circle there would still be room enough for all honest workers anxious to promote social reforms on the basis of obvious wrong-doing, without waiting to ascertain in how many instances the wrong in question is being committed. For just as all our social customs and political institutions—trial by jury, poor law, penal code, treatment and management of criminals—came into existence and developed themselves, not out of hot-beds of figures, but because our ancestors deemed them expedient for reasons which commended themselves to their narrow experience, so we, their descendants, may, if it so please us, plead for their destruction or modification on the ground that we, having fuller experience of their actual working, have weighty arguments to urge against them, or one or two apparently typical cases by which to prove the necessity for change.

In order to subdue our social foes it is not always necessary to bring against them the heavy artillery of tabulated figures. Nevertheless, as in the notable instance to which I am about to refer, it

must always be an immense advantage, in dealing with a great abuse, to present it not in a single example only, or even in one or two instances, but in its whole extent and magnitude. And I take it to be a most important function of statistics thus to present to the minds of men the whole length, depth, and breadth of some existing evil. For while a single case of running over in our crowded streets, a single shipwreck, a single railway accident, or a single example of brutal violence will affect the majority of minds more than the most striking array of figures, there is a minority, comprising a very large proportion of active reforming spirits, that finds in the multiplication of accidents and injuries the strongest argument in favour of preventive legislation. On minds of this order figures of arithmetic work the same sort of effect which a great novelist or poet will produce on the mind of the public. Each unit, touched with the realising faculty which statists share with other men of science, becomes instinct with life, and the aggregate moves in his mind, so to speak, with a resistless momentum.

The illustration of the advantage of collecting all the facts within our reach, to which I said I would refer, is taken from the life of that remarkable man whom I placed before you at the first ordinary meeting of this year as a great Statist—no less than a great Philanthropist—as one whose name ought, I think, to be indissolubly connected with this Society as even more a social than a prison reformed.

The period of time to which my illustration relates is the two years 1773, 1774, the centenary of those which together make up the Session on which we are now entering. It was in 1773 that John Howard was appointed Sheriff of Bedford, and in 1774, the year following, the legislature passed the two Acts by which it atoned for past neglect, and, as far as legislation could operate, freed the prisoner from the cruel bonds which illegal usages and physical neglect had forged for him. At the date to which I refer prisons were private property, and gaolers lived by fees levied with curious impartiality on guilt and innocence alike. Sheriffs and justices of the peace knew this, and thought it natural and right. But Howard, in discharge of a duty which seems to have been systematically neglected, or performed to no purpose, by sheriffs who had preceded him, no sooner enters the prisons of Bedford, and learns that the gaolers thus paid themselves by fees, and that the practice issued in the detention (often for very long periods) of large numbers of innocent men, than he bethinks himself of a remedy. This "dull and even dreary man," as he has been called, this "plodder" and man of "very moderate parts," as he modestly styles himself, takes in, as if with the glance of genius, both the evil and its remedy, and, what is more surprising still, sets himself to

work in the same patient, persevering spirit with which seventeen years before he had liberated his fellow captives in France, and reformed the after treatment of prisoners of war; in the same spirit in which he had in the interval rebuilt and regenerated his village of Cardington, to grapple with this, the third labour of our modern Hercules.

The remedy which, simple as it was, Howard seems to have been the first to discover, was the substitution of a fixed salary to the gaolers in lieu of their fees, and for this he applied to the Justices of the Peace. But they could not move without a precedent. So, without hesitation or loss of time, Howard rides into the adjoining counties in search of a precedent, but can find none. While busied in this fruitless search, however, he encounters in two or three of the gaols some poor creatures whose aspect is "singularly deplorable," and learns that they had been brought from the *Bridewells*. He accordingly sets out on a new tour of inspection into the counties he had so lately visited, and narrowly examines, not the bridewells only, but the houses of correction, and the city and town gaols; and so makes acquaintance with the terrible gaol-distemper, and its formidable associate, the confluent small-pox. Having taken accurate notes of all he saw, he is prepared, the very year after his appointment as sheriff, to give his evidence before a Committee of the House of Commons.

Now, had Howard rested content with one or two facts of either kind—an instance or two of illegal fees, a few examples of sickly prisons—he would certainly have failed. It was the completeness of his inquiry, and the consequent number of his facts that carried the day. Prepared at every point, without a break in his armour of proof, he bore down all opposition by the weight of his facts, and won, what he richly deserved, the greatest victory achieved single handed in the Parliamentary History of England.

In this simple history you have a good illustration of what statistics in the hands of a master can effect; and I submit that if Howard had done no more than this, he would have established a claim to recognition at our hands. But when we reflect that this work, begun and finished within the narrow span of time allotted to a single Session of this Society, was but a fraction of that greater work of four and thirty years, which began with the liberation of his fellow prisoners in France, and went on steadily, silently, unostentatiously, till his death in Russia, we must admit that this claim to recognition gains strength the more we think about it.

If I am asked what shape this recognition ought to take, I answer, some act of ours to show that we have taken note of the fact that this year, 1873, is the centenary of Howard's appointment as Sheriff of Bedford; this Session of 1873-74, the centenary of

the great statistical inquiry which had, as its immediate result, the removal of one of the greatest reproaches that ever stained the fair fame of England. Dr. Hyde Clarke, an esteemed member of our Council, has suggested to me that an appropriate, enduring, and useful memorial of this year and Session would be a Howard medal, to be awarded every year to the author of the best essay on one of the many social questions which Howard studied. The treatment of prisoners of war, the building of cottages for the poor, the state of prisons and prisoners, of hospitals, barracks, schools, and work-houses, the contagious diseases that may be said to inherit the claim to the attention which the gaol-distemper and the plague received at Howard's hands—these and kindred topics would furnish appropriate subjects for a long series of essays. There are many present here this evening, who will, I hope, agree with me in thinking that this centenary affords a favourable opportunity for giving to this Society the importance and advantage which other societies derive from having a medal stamped with an honoured name, to be offered and given every year for the encouragement of the sciences which they cultivate.

With these observations I leave the question in the hands of the Council and Fellows of the Society; and, inasmuch as it is quite possible that I attach undue importance to the name and work of Howard, will content myself with offering a hearty co-operation to any one who shall see fit to set on foot a subscription for this purpose.

But if, on the other hand, there are some who think that, after all, I have done scant justice to Howard in the paper which I read last January, that shortcoming must be ascribed to the limited nature of the thesis I then undertook to maintain. But I feel that if Howard's claim to the name of Statist be admitted, it must be in a large and full sense of that term—a sense inclusive of all his many merits; of his charity, patriotism, and philanthropy, no less than of his sound sense, rare scientific insight, unequalled industry, perfect love of truth, and absolute obedience to the call of duty. This great excellence at least we cannot deny him. One of the most religious and righteous men of his day, he went beyond all others in works of palliative charity: but he stood alone in this; that while other men rested content with the ever-beginning, ever-recurring work of palliation, he alone, not in high sounding words but by silent deeds, laid the secure foundations of that grand Policy of Prevention (the hope of the nations in the days to come) for which the Fellows of the Statistical Society are busily engaged, after Howard's own method, in collecting the materials.

ADDRESS of the PRESIDENT of SECTION F (ECONOMIC SCIENCE and STATISTICS) of the BRITISH ASSOCIATION for the ADVANCEMENT of SCIENCE, at the FORTY-THIRD MEETING, which was held at BRADFORD, September, 1873. By the RIGHT HONOURABLE W. E. FORSTER, M.P.

YOUR Council have asked me to take the responsible and honourable position of being the President of one of your Sections. I am quite sure that that honour cannot have been conferred upon me owing to any special fitness on my part, but rather from two facts—the one that I do happen to have taken an interest in the questions that have come before this Section for many years; and the other that I am a Bradford townsman and a Bradford member. As a Bradford man, I was so glad to do what I could to welcome the Association, that I felt I could not refuse to try to perform any duty that was imposed upon me. But I must acknowledge that in attempting to do so I have found special grounds of unfitness. The fact is, that my time and thoughts are so occupied with other pressing matters, that I really have not been able to prepare this address with that care and thought, or to bestow that pains in expressing what I have to say that I know is due to so distinguished an audience. I merely make this remark, for I do not want to take up your time by apologies, to explain why I have not followed the usual course, and brought forward a prepared written address, and why I have thus been obliged to ask you to let me make a speech instead of reading a paper. I do not deny that the accident of my being connected with the Government, does not specially fit me for this duty. In this Section we deal, and we must deal, with politics. Under our title, that of Economic Science and Statistics, there is hardly any question of political discussion, hardly any immediate question of pressing legislation, which may not be brought within its deliberations. And that has been proved by you, for if you look at your own *Journal*, you will see that such political questions—pressing questions, and I may say burning questions—have been successively brought before you, as the question of the income tax, the amalgamation of railways; education, of which last I am not unconscious of the difficulties, and many other matters that excite great interest, and might be made use of, but I am quite sure they will not at this Association be made use of, for party purposes. But it certainly, as a general rule, does not become any man who happens to have the honour of being a member of the ministry, to make

suggestions with regard to political measures, unless he is prepared to bring them forward and press them upon the responsibility of Government. It rather becomes such members of the ministry to hear suggestions, to listen to them, and carefully consider them. A man who is a member of the Cabinet, must also recollect that he must consider his colleagues, and must be very careful to say nothing that will commit them. However, care in these matters may be pushed too far, and as I am here now, all I can do is to ask you to forget, as I have tried to do, that I am connected with the Government, and to remember that in what I now say I commit no one but myself.

I think this question will occur to many of you, as it did to me, Why in this Association do we deal with politics? What business have we to have such a Section as this; why should we discuss political matters; what has the discussion of politics to do with the meetings of a scientific congress? There is an immediate answer to this question, and that is, that after all, there is a science in politics. If the political theorist—and I do not use the word as a word of reproach—but if the political thinker misconceives or misstates, or mistakes his facts or his statistics, he as surely fails as does the student of physical science who generalises from a partial or imperfect series of experiments. In like manner, if the practical politician, in attempting to apply the principles of economic science, breaks the laws of that science—for instance, the laws of political economy—the result will be that he will pay the penalty in the failure of his political measures, as certainly as does the practical mechanic or chemist who ignores the laws of chemistry or those regulating the application of mechanical forces.

But it may be said, that although this is true, such is the immense range which our Section would extend over, that there would be a danger in its taking up too much of our attention, and that these subjects had better be left to the kindred Association which was started as the great development of our Section—the Social Science Association—of which my noble friend Lord Houghton will be chairman on an early day. But I do not think there is any danger of our monopolising too much attention. After all, a very large number of members of our Association are those who act with great knowledge and interest in physical science, and who with great power give information and show anxiety to hear what their fellow members have to tell them. But I should be sorry to see this Section omitted from our programme. I think there is great advantage in bringing together men of science and politicians. Perhaps one result of this may be that we shall obtain higher scientific culture. I wish that this may be the case. Over and over again, in the work I have felt it my duty to try to do, I have

lamented my own scientific ignorance. I have felt—and I have no doubt others who have attempted it have also felt—that we could act more successfully if we knew more of the laws of nature. There is hardly any fact in human intercourse, hardly any influence which a man can bring to bear on his fellow men, that might not be explained, illustrated, and enforced by some analogy of outward nature—that has not, as it were, its counterpart in the workings of nature in the eyes of the man who is fortunate enough to have some real knowledge of both men and things.

Again, there is undoubtedly an advantage in subjecting political questions to the conditions of scientific debate. It is well that they should sometimes be treated and debated in that temper, and with that simple desire for the discovery of truth which ought to characterise all scientific discussion. Then, again, as regards this special Section, there is an advantage in the political theorist or thinker being brought into contact with the practical politicians, for when they come together I think the theorist would perhaps learn to appreciate and estimate more fairly than he sometimes does the immense friction, if I may use the term, with which the practical politician has to deal, and which he finds to clog and interfere with his efforts. It is not sufficient to announce and explain the law of economic science. In outward nature you have to deal with dead facts. In economic science, affecting the political and social condition of men, you have to deal with persons who have free will, and the power of exercising it, and of refusing to obey the laws which you explain, and we none of us can forget that we have to contend with, and to take account of, the likes and dislikes of men and the passions, and even the prejudices of men, and that it is not enough for a State to declare the laws of economic science, of political economy for example. We must not forget that many men will not obey those laws, however clearly we may explain them and point out the penalty of their transgression. Sometimes they disbelieve in the penalty, often they ignore it; and not seldom, knowing its existence, they prefer to incur it. We must take into account the existence of this friction, and we must be prepared for this result—a very disappointing result, and a result of which I am sure experimental philosophers would greatly complain if they were beset with it in physical science—and that is, that though just in proportion, as in any political measure, the laws of economic science are broken, there will be weakness and probable failure in that political measure, it by no means follows that just in proportion as the law is kept and adhered to there will be success. It is not seldom the case that by its very truthfulness a measure excites so much opposition that it insures its own defeat. Well, that is a reason which thinkers ought to bear in mind when they sometimes accuse

political men of delaying to bring forward measures of which they are convinced. It is a ground, and a reasonable and proper ground very often, for the postponement of a political measure based upon true principles. Those who are most in favour of such a measure, and most advocate it, feel that they are doing it harm by prematurely bringing it forward. But some persons push that doctrine too far, and say that it is a reason and an excuse why a measure should be brought forward upon false principles. Now, that I do not admit. I believe that nothing is really gained, though something may sometimes seem to be gained, by any man bringing forward a political measure upon principles in which he himself disbelieves. He may be quite sure that, in the different opinions of men, if it be at all desirable that such a measure should become law, there are plenty of people—if he will simply drop behind and not do that of which he disapproves—who will come forward and advocate it who do really approve of it.

But I must now, after these prefatory remarks, go to the special work of this Section. I believe it is usual for the President to refer in his address to the progress of economic science for the past year. Well, I think you will hardly expect me to do that. If I were to refer to the progress of economic science, I should have to show to what extent, amongst other ways, it has been put forward or not in legislation. I should have to defend the Government against charges that perhaps might be made of its not having been put forward. Well, I believe that you will feel that I should be taking a very unfair advantage of the post I occupy, and of the duty you have kindly imposed upon me, if I were to make this an opportunity of defending the Government. And, in fact, I cannot forget that one very important branch of economic science would be considered to be that with which I am myself connected—that of Education—and if I were to attempt such a review, it should necessarily partake of a much more personal character than I should desire. I therefore resist the temptation, although I do not deny that it is a temptation, when I have before me such an audience as this, to vindicate the principles upon which, on behalf of the Government, I have acted; or, at any rate, explain; and I think I should be able to explain with success, the fact that we have acted upon principle, and not upon motives of expediency.

But talking of a review of progress, I should be exceedingly glad, if I were able, to make any full statement of the progress which has been made in the economic condition of the English people—not for the last year only—for we cannot judge by such a short period, but for a longer time—say from the time when this Section was first formed, which I believe to be about forty years ago.

Now what, after all, is the great object of our deliberations in this Section? Why do we collect, and test, and analyse statistics? and why do we study the principles of economic science and the mode in which those principles are and ought to be applied? Many would reply, mainly in order to promote the economic well-being of the great mass of the community. Well, I should be exceedingly glad if some member of your Association, well qualified to do so, would consider whether, at some forthcoming opportunity, a careful comparison could not be made as to the economic condition of the great mass of the English people at this time, as compared with what it was forty years ago. I have not made that comparison. I have not had time to collect the necessary statistics; but I think this statement will hardly be challenged, that—take, for example, the condition of the manual labourers of the country, which is after all the largest class of the community, and must continue to be so—there has been progress the most hopeful for the future, and the most remarkable, as compared with like periods in the past. I do not think it will be denied that the great body of manual labourers throughout the country have a greater share of the comforts and enjoyments of life than they had forty years ago; that they are able to obtain more of the necessaries and comforts, and even of some of the luxuries of life; that their wages are higher (on which point I would refer you to the paper yesterday read by Professor Leone Levi, bearing in some measure on this matter), not only higher in themselves, but also as compared with the cost of living. There was great reason that they should be higher. The higher rate, too, is earned with shorter hours; and labour, generally speaking—I won't now speak of every trade, but generally speaking—is conducted under improved conditions, from those which existed at the former period. Passing from these purely material conditions, much as there is yet to do in education, no one will deny that there has been progress in education. No one, I think, will deny that there has been progress in general culture, and, speaking generally, I believe there has been great progress in better and more kindly relations between this large and important class and other classes of the community. Well, now, I should be very sorry if these remarks were misapprehended.

Do not suppose me to think, in stating my belief that there has been progress, that we have got to that point at which we can rest and be thankful. I should be very sorry to be supposed for a moment to be suggesting apathy to ourselves in our endeavours to improve the condition of the manual labourer, or suggesting or advising content to him—if by content be meant a cessation of efforts for his own improvement. I believe there is much in the condition of labour and the state of manual labourers throughout

the country to which the word content would be by no means applicable; there is much for others to do for them, and still more for them to do for themselves. I merely mention this progress as a stimulus for the future—not as any ground for rest.

This is not the place or the time to dilate upon what labourers can do for themselves, and all I would say on that matter is, that when any of us are advised or speak against what we may think to be the besetting sins of the labouring class, we ought never to forget what are the besetting sins of our own class. We must also recollect that, in the present state of civilisation we must make a great distinction between crime and vice—remembering that crime and vice cannot be attacked in like manner. We must continue to punish crime, to bring force to bear upon it; but as regards vice—and I include in it that great and terrible vice of drunkenness—I believe we shall be obliged to admit that the time has long passed—indeed I doubt when it ever existed—in which we can attack vice with success by force, or by any means but persuasion.

As regards, however, what can be done by others, by such a Section as this, by the Legislature, for the condition of the manual labourers—I believe that, notwithstanding what has been done, very much more may be done. I alluded to what appears to me, speaking generally, the improved condition of the labourer—that is to say, by the help of scientific discoveries, man fights nature with less suffering to himself. There are many of us who can detail the beneficent results of scientific discovery in one case after another. All I will say is, that I believe these conquests over nature are but the preludes to future triumphs, and that I look forward to the great and beneficent results being still more apparent in the future than it has been in the past, from the thought and experiments of scientific men, that they will enable the products of nature to be realised for the good of man with less suffering to the individual worker.

Take, again, the advantages of free trade; and what, after all, is free trade but the simply carrying out of scientific laws? It means nothing else. There was a dispute in old time as to whether the manual labourer would gain by free trade. No one now would raise that dispute for a moment. Not only English labourers have gained, but from our having learnt the lesson, and having adopted the principles of free trade, even the labourers of other countries, where they have not learnt these principles, have shared in the advantages of free trade, which we in these great centres of commerce have made our own. I do trust we may now see grounds for supposing that other nations are learning from our example, and as their working men have gained by what we have done, so our working men may gain by what they will do.

I can hardly avoid making one allusion to an event of the past year—to the very encouraging support of free trade shown by the action of the French Government. To the Emperor Napoleon we have all been grateful, for using his power in support of free trade, and we have to acknowledge his patriotism and his fidelity to knowledge and to true political philosophy in encouraging principles of free trade in France. But we know that they were forced upon the French people, and we did not know what they might do when they had freedom to do as they thought best. What has been the result? The Government—though having at its head a statesman who was not himself convinced upon this matter, and who had great influence—have in the past year declared themselves decidedly in favour of free trade. I cannot doubt that that fact will have taken hold upon men both in the United States and elsewhere. But economic science does not apply merely to the interchange of commodities between nations, but to the interchange of all matters of value. I think we feel that its principles must be enforced and carried out both with regard to land and to labour.

There should be nothing in the law whatever which should prevent the most entire freedom in selling and buying land, because I think that the mere statement of this principle can hardly be disputed, and is almost sufficient to encourage us in the reforms that will be necessary to carry it out. The same principle applies to labour—there must be freedom to sell it and freedom to buy it.

Then, again, I suppose our sanitary improvements must be considered to come within the range of our Section. Well, there is much, very much, to do in that matter. I think our aims in this direction are higher—and I take comfort from the fact—than they used to be. We are aiming not only at preventing death, but at making life better worth living by making it more healthy. And we no longer forget that in fighting our battle against disease, it is not those only who are killed that are merely to be considered, but also the wounded. In those terrible inflictions of preventible disease throughout the country the loss of life is very sad; but even more sorrowful, to my mind, are the numbers of our fellow creatures—fellow countrymen and women—who are doomed to struggle and fight the battle of life under the most severe conditions, because of the wounds they have received from preventible diseases. And on a matter like this you will at once see the advantages of this Section. It is most desirable that all those projects for sanitary improvement which are proposed by political thinkers, or by practical politicians, should be at once tested by scientific law and by men who are accustomed to make it a special subject with them.

I will not say anything more about my own particular Section; I

would merely refer to what I ventured to say after the able address of your President on Wednesday evening.

I would, however, refer to the discussion yesterday on the papers read by my friends, Mr. Morris and Professor Leone Levi, with reference to our expecting, in the increased well-being of the community, a greater diminution in the pauperism of the country than we yet see. I believe there is a diminution, and I am hopeful that it will be shown to a greater extent in a short period. But I am rather anxious—I may be thought by some rather heretical in what I am going to say—that in our objection to the evils that accompany a poor law, we should not carry that objection to the extent of imagining that we could do without any poor law. The objections to the poor law lie upon the surface. I fear it is true that it does encourage a want of thrift, and to some extent does deaden or weaken and make less likely the performance of domestic duties. And there ought to be very great reason for the poor law, if it be possible to make this charge. I think there is great reason. I do not believe that, in the present state of civilisation, it is safe or right not to acknowledge the principle of the poor law, namely, that a man shall have a right to live, and that absolute destitution shall be prevented. Very few of us are aware of the advantage that the acknowledgment of this principle has been to us. In comparing our social struggles, our political convulsions, in England with those of the continent, I believe that the one great reason why we have got through them with comparative safety, and have had reform instead of revolution—has been that the large body of our people have known that this right is acknowledged—the right to live.

Going back to the progress to which I have referred, we must bear in mind two facts. Those of you who have studied political economy, and are familiar with the writers on that subject of twenty, thirty, and forty years ago, will remember that they almost all supposed that there would be no great improvement without a great decrease in the population, or at any rate without a great decrease in its increase, if I may so put it. Mr. Malthus, Mr. Mill, and many other most able and excellent political economists, advocated very strongly what they called a prudential check on population as the only means, or the most probable means, of making progress in prosperity. Well, but our progress has been made without this check, and in spite of the great increase in population. I am a bad statistician, but I believe the increase during the last forty years has been greater than in almost any other previous term of forty years. The increase in the population of England and Wales, in round numbers, has been from  $16\frac{1}{2}$  millions in 1831, to  $21\frac{1}{2}$  millions in 1871, and yet the population is more prosperous.

Again, if there has been great progress on the whole in the well-being of the labourer, there has also been progress in the well-being of the capitalist. I am not going to speak of the special profits of special trades, but I believe it would be easy to prove that the increase of capital in this country has been much more than has kept pace with the increase of population. Well, if both classes—capitalists and labourers—have on the whole bettered their condition, I am not at all surprised to find that there is, as I believe, a better feeling between the two.

I hope my friend Mr. Morris, if he is here, will let me make some allusion to his able paper of yesterday. I do not agree with all his views; but I wish to treat them in the same spirit with which he treated the views of others—a spirit of fairness and willingness to appreciate what could be said on the other side. I am aware it is by no means a rare feeling, but a very common feeling at this time, that the disputes between labour and capital are more dangerous and more fierce than they were at former periods. I must demur to this statement. I think it may be true that these disputes are sometimes carried on upon a larger scale than formerly, because the number of labourers is greater now, and the power of communication is much easier; but what I venture to say is this—that these disputes are conducted with much less fierceness and acrimony than in former times. I also believe that they, generally speaking, do not last so long. For instance, there are some Bradford men, I suppose, who can remember the fierce struggle there was against the introduction of machinery into Bradford, the violent fights that there were at that time, though it would be almost impossible to have anything of that kind in Bradford now. Again, I can recollect, almost as a boy, I was learning a manufacturing business at Norwich, and there there was a dispute, and the masters had to walk through the town looking with suspicion at almost everybody that was coming near them, for fear of having vitriol thrown into their eyes. That, again, is a state of things that has long passed away. Again, take the Preston strike of twenty years ago, which I studied somewhat keenly. That was a struggle that lasted longer than almost any dispute of modern times, and I must add my conviction that there is not that foolish struggle against the laws of science that there was in former times.

Well, then, as I demur to my friend Mr. Morris's statement, he will not be surprised if I say that I demur to the remedy he proposed at the close of his paper. I think he overrates the evil: but, whether he does so or not, his remedy—a league of capitalists and capital throughout the country—is one which I should be most grieved to see any attempt to apply. Whatever individual labourers may advise their fellows, I believe that in this country, where the

interests of the labouring men are so varied, however it may be advised, a league of labour against capital is impossible. There may be talk about it at meetings, and there may be talk about it in the newspapers, but I do not believe in its possibility, though if anything could make it possible, it would be a league of capitalists against labourers. I think we shall agree that two such opposing leagues would be one of the greatest calamities from which the country could suffer. I should tremble at the thought of our industry being divided into hostile forces, and all the industrial workers of England being distributed into opposing camps. Some persons would say it is impossible because the capitalists and labourers would be so unequally matched in power—that now you have given votes to the labourers, their numbers and the power of their votes would make them so much stronger than the capitalists. Now, I cannot take that ground myself. I think if the two parties were unwise enough to band themselves in opposition—a thing which I believe they never will do—they would not be so unequally matched. I believe that money will always buy men, and capital always find support among labourers. I believe they would not be unmatched in power; and although I know very well that my friend and others only mention such a remedy for extreme occasions, and would advocate it on the fairest principles, I believe that if the contest once took place, it would be conducted with equal recklessness on both sides. Under these circumstances I take some additional comfort from one political measure with which I had something to do. If there was anything like such a struggle between classes throughout the country, there would be such a disposition on the side of each party to clutch the power of the law, and to aim at legislative measures, as cannot but make me feel glad that the Government of which I am a member have done something towards bridling the power of the leaders on each side by giving to the voters the protection of the ballot; and that brings me to one remark, which, perhaps you will allow me to make, and it is this—that putting aside the possibility of these opposing leagues, and I dismiss them from my mind—I think that on both sides, those who advocate the rights of labour and those who advocate the protection of the rights of capital, there is a little too much anxiety to make use of the law. No doubt there should be perfect freedom in selling labour, and that implies that there should be perfect freedom in combination. I believe there was no greater mistake than the attempt to prevent a man from agreeing with his fellow workmen as to the conditions upon which he should like to sell his labour. But, of course, we should also say that there should be perfect freedom to refuse to combine, and that such right should be respected and protected. But in our effort to secure that freedom we must not try to get the

law to do that which it cannot rightly, or in fact effectually do. We can make use of the law to protect the Queen's subjects against bodily harm and physical violence, but it is no use attempting to protect men against persuasion or even against moral intimidation. They can only protect themselves, and if the law attempts or strives to do that it will surely fail, and probably lead those against whom the attempts are exercised, to think that there is a desire to interfere by recourse to the law with their reasonable freedom. And I think, in dealing with this question of the law, we should not have recourse to exceptional legislation.

To illustrate that, I may say that very few things have been done by the House of Commons that I so much regret as the way in which we dealt with trades' unions at Sheffield. I think the law we passed, in order to get at information with regard to trades' unions at Sheffield, to obtain an available blue book as to what had been done at Sheffield, was one much to be regretted. We issued a Commission, and we stated that every man, whatever he had done, might come before that Commission and give evidence perfectly free from any of the consequences of the crime he had committed. What was the result? That we had men who had been engaged in the plotting and planning of deliberate murder, who came forward and stated what they had been guilty of, and then there was the declaration of the law which saved them from the consequences of their crime. That did not apply merely to the case of king's evidence, where the least guilty would be saved, and the more guilty punished, but it was a paltering with the law, applying as it did to all who were guilty, affording, as it did, protection to the murderer—and that in order that we might acquire information on which to found exceptional legislation. Such a step will, I hope, never be repeated. Our real hope in this matter must be that which has caused what I conceive to be the progress that has been made, namely, the effect of public opinion and education; the slow result of the proclamation of truth as to the relations of labour and capital. By these means alone we can hope to solve the difficulties which exist; and I cannot but think that such a Section as this will be a most useful aid in this important work. I may be told that this hope is rash, when we see the extraordinary ideas which are propagated in congresses, and reported day by day in the newspapers. Well, I have read with great interest what has been said at Geneva at both these congresses, and I have observed this encouraging fact—that hardly any Englishmen have taken part in them, and that, when they did, it was on the side of good sense, and to denounce wild and impracticable ideas. But this is not the first time that we have had these notions declared before us.

My noble friend (Lord Houghton) and myself, in 1848, were in

Paris, where we amused and interested ourselves by trying to learn what we could of French notions at that time about the relations of society, especially of labour and capital; and I am sure the ideas which we now think strange, were then stated with even more extravagance; and I think with much more agreement among the general public than at this moment. The Commune of Paris may be quoted, but I do not think it is a fair illustration. The Commune had its sad crimes—of that I fear there can be no doubt—but these crimes and its very existence were not so much the effect of French notions with regard to Communism. They were rather a reaction against the central and severe despotism which had prevailed in France, destroying, as it were, all local powers, and trying to crush out local life. I believe that a vastly larger number of working men are admitting now what we consider to be the fundamental facts of political economy than was formerly the case. We find they will now generally acknowledge that there are, after all, only three ways by which labour can be better remunerated. The first is by the increase of capital, of the wages fund. The second is by the diminution of labourers, either by emigration or by a diminution of population; and that not simply by the diminution of labourers in a special trade. That is a mistake which they still sometimes fall into. It may appear to relieve a trade for a time, but it only does so by driving more labourers into some other trade, making that trade unremunerative or less remunerative to the labourer, and thus bringing him back to the trade which is more so. The only way in which they can hope for a remedy under the second head is by a diminution of labourers generally. The third way in which the conditions of labour may be improved, is that by which the labourer may himself become a capitalist. Our recent progress has been made almost entirely in consequence of the action of the first principle I have named, viz., by the effective industry of the country—the capitalist and the labourer working successfully together, and thereby making an immense increase in the capital and in the labour fund; but I think that all attempts to better the conditions of labour in the third way—that of the labourer becoming capitalist—are most interesting, most hopeful; and it seems to be a special business of such a Section as this to watch the attempts to carry out these experiments, and to find out year by year how far they have been successful.

With regard to co-operation, just let me make one remark. There are two kinds of co-operation; and if we attempt to consider it scientifically we must not mix them up together. There was that form of co-operation in which the capitalist or employer paid the labourer—not altogether in wages, but in giving him a share of the profits. I was very hopeful that by such means the relations in

question might be made better, and I am still hopeful, but perhaps not quite so much so as I was, because I see clearly two accompaniments of this; one is, that we cannot, and must not, expect the labourer to take both sides of the bargain. We must not expect him to suffer loss, for sometimes there is loss. He cannot, if he is working from week to week, unless he has himself become a capitalist by saving, do without his daily and weekly wages. Therefore we have to pay him his share of the profits, while we cannot make him responsible for a share of any loss. He cannot, then, be said to be a sharer in the profit and loss; he is only a sharer in the profit. Then, again, I think, if this were generally done we should find that it would be merely a mode of payment, though perhaps a more satisfactory mode; but we might again have disputes as to the share of the profits he ought to have. This does not prevent us from watching these experiments with great care and anxiety, and with great hope. Then there is the other mode of co-operation, which may be called co-operation proper, that is to say, the co-operation in which labour is counted as capital, and the labourer becomes a shareholder, and putting in some little savings also, is an actual sharer in the enterprise. Allusion has been made in our discussions to the growth of this kind of co-operation in this district. We know it very well in Bradford, and especially in the neighbouring towns. We have seen, for instance, the enormous and most satisfactory success of the Rochdale Co-operative Store. It is more difficult to apply this principle to production; but I am most anxious to see the experiments in that direction scientifically observed. I am told, though I do not know whether the statement is altogether borne out, that co-operative mills have been tried, and, to a great extent, have succeeded in Lancashire; and that co-operative mills, where established, passed the commercial crisis with great stability. Experiments of this kind are most interesting, and I can only say that I welcome them with great hopefulness. As an employer of labour—for I cannot forget that I am still an employer—I think there is great advantage in working men thus employing themselves and finding out the position of the capitalists, and also of discovering that there is not always a profit, but sometimes a loss, and that we must not, when we look to men who have made large fortunes, altogether forget that fortunes have been lost. Again, though I cannot aspire to be a statesman, yet as a politician and as a member of the Government of the country, I hail the success of these experiments still more hopefully.

It is said that one of the great causes of stability in America, and even in France, notwithstanding its many convulsions, is the large number of peasant proprietors; and I think we should have some share of the same kind of stability in this country by having

a large number of working men with their own stake in the country and their own interest in its prosperous government. One or two facts have come out, even in our discussion, which have shown pretty clearly that it is not at all fair, nor true, to suppose that the wages of the working man are in all cases, or, I may say, even generally, so lavishly spent as some persons suppose. If we could only get a really dependable statistical statement of the increase in the savings of the working classes in one form or another in the last few years, I believe we should be astonished and delighted. The success of your benefit building societies (upon which we have had a paper in our Section) is only one instance illustrative of this fact.

I feel, however, that I cannot leave this labour question—the condition of the labourer in England—without one further remark, and that is, some allusion to the movement amongst the agricultural population. There, again, what a progress will, after all, be acknowledged by any person, however much opposed to the movement! The progress we have made is shown in Mr. Arch's meetings and Mr. Arch's speeches; what a progress compared with the movements when I was a boy—say forty years ago—to the rick burning in the southern counties. I cannot enter into the question now, but I confess I am not sorry that there is a movement amongst the agricultural population. I do not in the slightest degree, in making this remark, blame their employers. I believe they have acted as other employers would have done—and in some cases better—for they have been brought more into contact with their people. But I do think the fact of it being supposed that no agricultural labourer could combine with his fellow labourers, did do something towards making their wages lower than those of other classes of the community. But in watching this movement, I think we who, by our position, are not much interested in it, should watch it with very great sympathy for both sides. The condition of the agricultural labourer is in many cases that which ought to excite our sympathy; but the position of the farmer also is a very difficult one. His profit is not of that nature that he can make a large increase of money payment without a good deal of difficulty; and I therefore think it is a favourable feature in this movement, that there is a third class somewhat connected with it—the landlords—who are in a position which enables them to act as moderators on both sides, and whose interests are, to some extent, involved in the matter. May I just throw out a hint to the Section, that I think it would be a very good thing if a paper could be produced before it, really bringing the laws of political economy to the solution of this question—how far the rent that is paid for land affects the question of the wages of the agricultural labourer?

There are only two other remarks that I would make on this matter before I leave it, which concerns not so much the condition of England, as what has happened outside of England, but which cannot but have an effect upon England; and first it is this, that if there was an attempt to describe progress in economical well-being for the last thirty or forty years, there would be one great fact which would appear pre-eminent before all others—the abolition of slavery in the United States. I am not now entering into the moral evils of slavery; but it may not be out of place in me to allude to what would have been the consequences to economic science, if the slave power of the South had succeeded, and in that great country, the United States, compulsory rather than free labour had been acknowledged to be the corner-stone of the social system. I believe that historians will hereafter admit that the failure of that bold and well-planned attempt to seize hold of power in the United States in order to promote slavery, was almost the greatest escape which civilisation ever had. But however much we may rejoice over that escape, we must not forget that the spirit of slavery still exists. We hope we may have struck some blow against slavery this year on the East Coast of Africa, but I am made more sorrowful than hopeful from what I have seen of the matter during the last year or two. The efforts made by men of our own tongue, and, I fear by men of our own race, to carry on what is practically a slave trade in the Pacific Islands, are most dispiriting, and demand our earnest endeavours to check it in every way we can. I will only just allude to the attempt which is being made in many western countries in which there is a demand for labour, to forcibly import Chinese coolies, wherever it is possible to do so. I have, however, some hope in regard to both these matters. I believe the moral sense of England has determined that her name shall not be shamed by the slave trade in the Pacific, and I hope we shall do our duty in regard to this eastern traffic. I entertain this hope because the inhabitants of eastern nations are becoming more and more able to take care of themselves. This brings me to the other fact, which, I think, we ought not to forget, and that is, the remarkable intellectual movement which is now taking place among eastern nations—a change which must result in great material advancement. I may allude to the wonderful reforms in Japan, which have so far appeared to have been carried out in real substance and with vitality of action, and which would seem to show that this country is waking up from the dead sleep of ages—a fact which will, I think, be hereafter acknowledged as the most extraordinary phenomenon of the last two or three years. I think we also see something of the same tendency in China; and I shall be surprised if we do not see some similar movement in our own Indian possessions before long. Even

the recent visit of the Shah of Persia, although there was much in it of not much reality, is, nevertheless, of itself a very interesting fact. It is a matter of some interest to us to find that the despotic ruler of an eastern nation has thought it necessary to pay a visit to the west. It would be hard to foresee what will be the economic results of this intellectual movement, if it should go on increasing in extent and activity. It may cause to some extent competition with our labourers; but I believe that the general result of it will be that it will tend enormously to the advantage of both labour and capital.

Well, ladies and gentlemen, I have only one more remark to make before I sit down. There was one event—one sad event—that occurred last year to which I must allude. It would ill become me to close this address without making some reference to the irreparable loss which economic science has sustained in the death of Mr. Mill. That man, from whose lucid writings most of us have learnt what political economy we know, has been struck down in the full vigour of his thought, with his power of expression undiminished. I think there is no one who would dispute that vigour, or who would deny that in his remarkable faculty for the exposition and the illustration of a truth, John Stuart Mill was unrivalled in our time, and hardly excelled in any other. But his loss cannot be measured by that faculty of exposition; he was one of those who not merely explained and declared principles, but who endeavoured to apply them. He was not content with stating problems; he did not shrink from the attempt to solve them. I know that many of us would not in all cases accept his solutions; but who of us is there who would not acknowledge the perfect sincerity of his motive—the absolute truthfulness of his actions? Many of you knew him well. I had not that privilege; but I knew him well enough to feel that the spirit with which, in attempting to apply his principles, he dealt with social and political questions, was so pure and noble, so sincere and single-minded, that he spread, as it were, an ennobling atmosphere around him, and for the time shamed away all mean intrigue and personal prejudice or vanity. I hope that those of us who in future try to study or to apply those principles, will always keep before us the example of the author of the “Principles of Political Economy.”

OPENING ADDRESS of the PRESIDENT of the SOCIAL SCIENCE CONGRESS,  
at NORWICH, October, 1873. By the RIGHT HONOURABLE  
LORD HOUGHTON, Vice-President of the Statistical Society.

My Lords, Ladies, and Gentlemen:—

I am inclined to think that any distinguished man of science who annually presides over the meetings of the British Association, has a comparatively easy task to perform. He is well acquainted with at least one branch of his subject, and is supplied with accurate information of all discovery and progress in others. He is thus enabled not only to make his audience familiar with the results of the latest observation, but to let them feel at what point they actually stand in each path of human knowledge, and how far they are justified from their comprehension of the past, in looking forward to the development of future phenomena. Such is not the position of the occupant of this chair. He has not to deal with numbers operating under conditions of absolute certainty, or with processes following the unvarying laws of external nature. His factors are living men, creatures of appetites, passions, hopes, fears, and all the other incidents of temperament and will. The very laws and institutions to which they are subject, are in great part of their own formation, and partake of the mutability of their nature and of the uncertainty of their destiny; their very powers of observation are limited by the conditions of the society in which, at any given moment, they happen to be placed, and affected by all the influences they profess to criticise or examine. The record of circumstances, which is commonly called History, takes inevitably the colour of the thoughts and opinions of the times in which it is written, and legislation, which we might fairly assume to be the expression of the moral and political ideas of mankind at any particular place or period, proves, on accurate examination, to be a very false representative of actual life. The fierce and unscrupulous repression of disorder, becomes the nurse and propagator of habits of violence, and tastes of cruelty, and ingenious devices for the detection and suppression of fraud, only increase the ingenuities of villainy; and not until the long and gradual processes of civilisation call out a spontaneous action of the individual will, in concurrence with the legal requirements, do we attain that social condition in which your notions of what is right and just stand any chance of being realised. We need not look further than the annals of our own country for an illustration of this necessity. In the earlier half of the four-

teenth century the ceremony and functions of public justice were nearly as complete as at the present time. There were the Central Courts of Justice—not following the King's person, though often honoured with his presence—the King's Bench, the Common Bench, and the Exchequer, sitting regularly as now; there were the Justices in Eyre, pursuing their circuits at stated periods and with undisputed functions, both of assise and of gaol delivery; there where the commissions of "good and lawful men" appointed to keep and maintain the peace, as represented by the town and country magistrates of our day; and yet life and property were little more secure than when Archbishop Lanfranc implored the Pope to relieve him from the responsibility of being the religious ruler of such godless tribes of barbarians. There was hardly a district without its private war, hardly a road without its organised brigandage, hardly a city without its continual tumults, in which every prisoner had his hope of rescue. That very institution of Jury, to which we now look with an almost superstitious reverence, that shrinks from any alteration of its form and procedure even on the most substantial grounds, was distorted by the predisposition of class and locality, into an organisation for the impunity of crime, and "party-swearers" and perjury became a point of honour. In the first volume of the "History of Crime in England," by Mr. Owen Pike, to the continuation of which every student of legislation and manners will look forward with interest, these facts are delineated with great vivacity and learning, and their consideration has impressed me strongly with the uncertain *data* on which all Social Science is founded, and the importance of the connection between sociology and biology, which Mr. Herbert Spencer, both in his philosophical works and in the elaborate tabular statement of Social Facts which he has supervised, and which I earnestly recommend to your notice, is now expounding and illustrating. But the human element with which even Mr. Spencer has to deal, is no such æther as that in which suns rest and planets move, or even as that terrestrial atmosphere whose composition we can analyse, and whose very storms we are learning to subject to law. Science may draw its deductions and calculate its averages from accumulated facts, but we, who have to deal with a small range of phenomena, and to apply our conclusions to the better order, the more established peace, the clearer enlightenment, the wider comfort, the deeper happiness, of the social life in which our lot on earth is cast, may well be forgiven if sometimes we doubt whether, even if we ever do come to a scientific perception of the Laws of Social Humanity, it will help us much in the solution of the problem of daily existence. Civilisation, acting through education, must increase the number of motive forces in the intelligence and consciousness of the individual, so as

to liberate him more and more from that dominion of one passion or one idea which endangers his moral liberty, and which, in its ultimate form, is insanity in the man and fanatic fury in society. The force and number of bad motives must be diminished by a larger distribution of wealth, by the elevation of labour, by the more just relation of classes, and by a firmer independence of character. Yet, after all, the practical Social Science will ever consist in making the best we can of the materials before us, in the simplification of laws, and in the integrity of their execution, in making knowledge of easy access and of effective communication, in diminishing to a *minimum* the sanitary dangers incident to the agglomeration of masses of men, and to the exercise of occupations either in themselves perilous or exposed to noxious influences, and in facilitating to the utmost the participation of the largest number in the produce of human labour and invention.

Having now for a moment paid a becoming homage to the sphere of thought and imagination which may rightfully entitle itself Social Science in the sense of physical Psychology or absolute Utility, I fall back on a plain statement of the legislative measures of the last year that affect the jurisprudence, the intellectual growth and material welfare of the British nation, and on one or two questions which, at the present time especially, occupy public attention. The question of the submission of international disputes to a neutral tribunal has received some illustration from recent events. The boundary between certain British and American possessions has been referred to, and decided by the Emperor of Germany in favour of the United States. It seems strange that a treaty professing to decide an uncertain frontier should not have been accompanied by a survey and plan which should have made such a doubt impossible. It is to be hoped that in future the Foreign Office will call into requisition the services of the Royal Geographical Society, which would at any rate take care that we fully understood the nature of the locality that might be the subject-matter of settlement. The Arbitration of Geneva is of far graver import. It was conducted with much apparatus of political labour and legal ability, and its judgment has been received with a discontented submission. The defeated party in a friendly suit is rarely convinced of the complete justice of the decision, and the powerful remonstrance of the English Arbitrator has seriously damaged the general satisfaction at the experiment. An especial difficulty in the conduct of such a proceeding has thrust itself upon our notice. The desire to substitute pacific negotiations for belligerent action, has been long in the mind and hearts of civilised men, but the constitution of a competent tribunal has always formed the chief obstacle to every solution of the problem. Immanuel Kant, in his "Project of Perpetual Peace,"

has nothing more practical to propose than a confederation of nations, *civitas gentium*, which should act at once as judge and executive in all international quarrels; and I do not know that any court has hitherto been devised more capable, from the character, judgment, and intelligence of its members, than that which met at Geneva. But it may be doubted whether there was not something in the nature of the case presented to them which, from the very fact of their being foreigners, it was almost impossible for them entirely to comprehend. For instance, the British Government had agreed to abide by the issue whether they had or had not exercised "due diligence" in preventing the Confederate States of America from making use of British ports for the construction of vessels of war. The municipal law of England at that time was confessedly inefficient for that purpose; and it required a more stringent measure, such as the present Foreign Enlistment Act, founded on the recommendations of the Commission on the Neutrality Laws (of which I had the honour to be a member), to render impracticable such an abuse of the hospitality of a neutral State. The Arbitrators may have argued, that it was the duty of the British Government at that time so to strengthen the vigour of their municipal law, as to enable them fully to carry out the neutrality they professedly desired to maintain, and in the abstract they would have been right. But an Englishman, who had lived through that time, and had been cognisant of the public feeling of the governing classes of this country, would have been aware how impossible it would have been for any Government to have carried through the House of Commons an alteration of the law apparently at the dictation of the Northern States of America, and which might have had the effect of turning the balance of the contest against the Confederate South. Thus, in truth, England has been amerced, not for any undue neglect of the statesman of the time to administer the law as it stood, but for a condition of public opinion which, from whatever motive, mistook the power of the contending parties, and allowed their feelings or their prejudices to obscure their political judgment. When we wanted it for our own purposes, and in accordance with the sentiments of the time, the requisite amendment of the law was carried through both Houses of Parliament in twenty-four hours. For this and other political reasons, it is doubtful whether the general cause of international arbitration has gained by the late proceedings, although the adoption of a resolution in favour of the system by a majority of the House of Commons, towards the end of the Session might seem to warrant a different conclusion.

In addition to the present treaties for the extradition of criminals, with France, the United States, Germany, and Belgium, others of a similar nature have been this year concluded with Italy and Den-

mark; others with Brazil, Sweden, and Norway have been signed, but are not yet in force; negotiations have just arrived at a satisfactory conclusion with Austria and Hungary, and are in progress with the Netherlands, Portugal, Russia, Switzerland, Hayti, Ecuador, and Central America, showing great advance in the combination of the high police of civilised nations for the detection and punishment of graver crimes. Our existing treaties with France and the United States are under revision, with the intention of extending and insuring their efficiency. The local arrangements between our colonies and adjacent countries, though numerous, are yet far from complete. There is a clause in this year's amendment of the Merchant Shipping Act, which may be the means of checking some acts of violence that have hitherto escaped punishment from a defect in our international obligations. I allude to cruelties committed on the high seas by Englishmen or Americans in the merchant service. It is now fourteen years since a Liverpool merchant, distinguished in commerce and in letters, Mr. Henry Bright, directed attention, in a letter addressed to Mr. Samuel Whitbread, to the flagrant cases of assault and even manslaughter which came to the knowledge of the Liverpool authorities, but for which, in consequence of the locality in which the offence occurred, there was no legal remedy. The number of unhappy sailors who were removed to the Liverpool hospitals from the ill-usage they had received was so great, that they were commonly called "Consular Cases." I brought the question before the House of Commons in 1859, and during the following session, Sir George Cornewall Lewis informed the House, that he was engaged in negotiation with Mr. Dallas, then United States Minister, and that the draught of a convention had been transmitted to the American Government. Since that time the subject has slept; the great issues of the American War overshadowed all individual wrongs and interests, and it now remains for Lord Granville to use the powers conveyed to him by this new Act of Parliament, to supply this defect of justice.

The Session of 1873 has not been fruitful in measures of higher legislation. The Commission, of which Lord Cairns was the leading member, has resulted in the establishment of a High Court of Judicature, to which will be transferred Appellate Jurisdiction now exercised by an informal Committee of the House of Lords. It is a curious question, when the theory of the constitution of the whole House as the Supreme Court of Judicature, passed into the practice of confining the consideration and decision of all cases of appeal from the inferior courts to the law lords who happen to be peers. The last attempt to revive the ancient custom was made by the late Duke of Richmond, in the case of the "*Queen v. O'Connell*," but

without success, as is not surprising when the specially political nature of the matter in question is remembered. It is, indeed, not improbable that the fear of tainting the pure stream of justice with political or party feeling, may have had as much to do with the practical abandonment of their legal privileges by the lay lords, as the natural unwillingness of Englishmen to interfere in matters not strictly appropriate to their knowledge or capacity. It is, however, certain that the more patent defects of the present tribunal, such as the prorogation of the court during the parliamentary recess, and the voluntary attendance of the judges, might have been obviated without so sharp a break of constitutional tradition, if there had been in the public mind an earnest desire to sustain the dignity of the Hereditary Assembly. A more serious issue will be raised when the schedule of the Act which regulates the procedure comes to be applied and criticised. There is something fascinating to the popular ear in the fallacious phrase, "the fusion "of law and equity," and a minister of the crown has lately taken credit for the cessation of such a scandal as a suit being decided one way in one court and another in another; but it remains to be seen whether the duty and constitutional right which courts of equity have exerted, when they assumed to administer relief required by justice and not obtainable at law, will be satisfactorily exercised under the new system, and whether there may not be still place for the *dictum* of the first Lord Redesdale, "that the separation of law "and equity has produced a purity in the administration of justice "which could not be effected by other means." It is also worth notice, that the absence of clerical judges from ecclesiastical appeals will follow from their transference to the supreme court, and no colour of spiritual validity will remain in judgments on doctrinal disputes. While this exclusion will, no doubt, relieve the chief authorities of the Church of England from occasional obloquy, it may offend the feelings of many excellent persons to see the most solemn controversies of theology decided by a bench of laymen with the simplicity of a contract debt.

The only novelty in the public administration has been the establishment of a Board of three persons, commissioned to arbitrate on railway matters between the different companies, and to interfere, for the public advantage, at the solicitation of certain corporate bodies. It is invested with large discretionary powers, and can decide without appeal on questions of fact. There seems no especial reason at this moment for the formation of such a tribunal, and it probably would not have occurred but for the accident of the desire of two northern railway companies to give to their reciprocal traffic arrangements the validity of a legal amalgamation. This proposal offered such evident advantages for the convenience of the public,

that the difficulties which stood in its way came upon its promoters almost as a surprise, and, although not received by Parliament with any positive ill-will, it was postponed till a joint committee of both Houses had reported on the general question of railway amalgamation. The evidence taken was various and valuable, and the report balanced the objections and advantages with great ability, without coming to any absolute decision. It left each case to stand on its own merits; but the discussion which had been provoked in Parliament and in the press, suggested the appointment of a Government authority which should facilitate the combined action of different companies, and assist in removing obstacles to the convenience of locomotion and the transit of commerce. Excited by this action on the part of the Government, the far larger speculation of the purchase and future management of the railways of the United Kingdom by the State, has been agitated with considerable fervour. A paper by Mr. Biddulph Martin, read before the Statistical Society in March, and the discussion which followed it, as well as a paper by Mr. Haughton, and the debate in which Mr. Foster took part at the late meeting of the British Association at Bradford, will well repay perusal. The refusal by Parliament of the first large amalgamation demanded, may seem to indicate an indisposition to move at all in the direction of any extensive scheme of enlarged administration; but it is not likely that a question so attractive to that class of politicians who look to centralisation and State authority as a panacea for all imperfections, according to the immediate fashion of modern democracy, will be allowed to rest. On the one hand will be urged the probability of a general reduction of railway fares, and the possibility of some uniform rate analogous to the penny-postage—the more direct action of public opinion producing a readier adoption of new and improved machinery, better station arrangements and accommodation, with a more liberal supply of railway servants, and an expectation of additional security to life and person, as inferred from the immunity from accidents in the royal navy when compared with those that occur in the mercantile marine. On the other side, it may be legitimately argued that the difficulty of an operation estimated at from 600,000,000*l.* to 1,000,000,000*l.* sterling, might awe even the financial audacity of our time, especially as it would be necessary to calculate not only present but future profits—that there is a flexibility and adaptation to circumstances and localities in our present system which a rigid and uniform public administration will not supply—that the addition of so vast a patronage and influence to the present power of the Government of the day, will not be regarded without jealousy and suspicion—and that there is something in the spirit of the English people which attaches them to the exercise of private enterprise and

individual energy, beyond all considerations of economy, or even of unity and completeness. Whichever of these orders of thought may ultimately prevail, it is indisputable that up to this time, whatever may have been the cost of competition and the loss to individuals, the result to the country is such a network of railway accommodation as no other nation approaches, and a continuous course of concession on the part of the companies to the public convenience and demands.

No practical progress, I fear, has been made in the vexed question of sanitary reform. Day after day it comes before us illustrated with fresh disaster and novel difficulty. The conflict of powers can only be averted by some absolute authority, and even when that authority is established, it too often refuses to move. There could be no better evidence of the exigencies and embarrassments of the present state of things, than [the story of the Bill which Mr. Powell and Sir Charles Adderley introduced during the late Session. It was evidently supported by the Government; but the new arrangement which prevents any fresh matter from being brought on after half-past 12 having delayed the second reading, when it had passed the next stage the Session was too far advanced for any further procedure. The loss of this measure is much to be regretted; it would, among other useful enactments, have given to rural sanitary authorities the power of making bye-laws and of compulsory purchase, which are now only possessed by the urban authorities, and would have enabled the Local Government Board, by order, to supersede the sanitary authority in cases of non-performance or neglect. It will, perhaps, be found necessary, in future legislation on this pressing subject, to give to a much smaller proportion of the inhabitants than is now required, the means of setting the Local Government Board in motion, and owners must have more power to act independently of their tenants.

The operation of the Licensing Act of Mr. Bruce, now Lord Aberdare, still excites considerable interest, and is the subject of some angry discussion. The privilege of extending time granted to public-houses in the metropolis, produces much jealousy in many large towns; and, indeed, it is difficult to allege any apparent reason why Liverpool should go to bed an hour earlier than London. The practical difficulty, no doubt, lies in drawing the line between many large towns and those of moderate dimensions. The Home Office has issued circulars desiring information respecting the effects of this legislation on the morality and the peace of the different localities, and some of the answers have already been made public. They all agree that the general tranquillity is improved, but there is little or no evidence of the diminution of intoxication. Indeed, the committals for drunkenness have, on the whole,

increased, though this may be attributed in a certain extent to the greater vigilance of the police, and the unwillingness of the owners of public-houses to detain customers who might compromise their interests. We may, therefore, assume that the extent of this national calamity has not seriously been affected by any legislation. Nor, indeed, does the evil seem to yield either to the immense moral pressure which is brought to bear upon it by the general consciousness of its intensity, nor to be touched by the personal protest and self-denial of multitudes. The earnestness of this feeling has taken a most unusual direction in this country, in asking for so extreme a form of legislative interference as would empower the majority of a locality to suppress by force a whole category of ordinary trades and occupations, and in making this demand an election cry and test of political capacity. Wise or not, just or not, politic or not, possible or not, there is assuredly something deeply pathetic in the subordination of general objects and desires to this conviction of one predominant social misery, consequent on the temptations and weaknesses of mankind. It would, however, almost seem as if this very enthusiasm had provoked an obstinate resistance on the other side, just as the unflinching severity and stern ideal of Puritan life and manners, was followed by the licentiousness of the days of Charles II, and there is no doubt that the advocacy of the Permissive Bill has given cohesion and prominence to the publican interest. Might not something more be done by more attention to the improvement of manners, and to the physical causes to which a large portion of our present drunkenness is indisputably due? A more general and careful education, an extension of moral interests and intellectual pleasures, a greater variety in the pursuits and social comforts of domestic life, a clearer perception of the indirect consequences of self-indulgence, have resulted in an entire change in the habits of the upper classes, as compared with the customary intemperance of the last century. Why should we not anticipate an equal alteration if we could cultivate the tastes, improve the dwellings, enlighten the understandings, and elevate the sense of responsibility in the operative masses? We may well be hopeless of extinguishing the yearning for alcoholic excitement, where extreme poverty and hopeless misery give to drink the facile charm of the cheapest food and readiest forgetfulness; but much may assuredly be done to check its abuse by the vast numbers who have not the plea of necessity or the excuse of despair. Here, indeed, it shows itself in the saddest form of all, in the wrecking of prosperous homes, in the gradual imbecility of fair, even of superior, natural powers, in the daily corruption of an honest mind by conscious falsehood and secret shame. Such simple means as frequent fountains of pure water, and a ready supply of unintoxicating drinks,

deserve the attention not only of charitable individuals, but of associations and even of the State. If tea and coffee-houses, without any especial ensign of temperance, were at hand for the thirsty workman, as they are in most parts of the Continent, he would not have to resort to the public-house to satisfy a simple desire of nature; and if places of innocent amusement were more accessible, the tavern would not be the only *soirée* of the people. But there seems to me to be yet another direction to which I would lead your attention on this matter. A national love for strong drinks is a characteristic of the nobler and more energetic populations of the world: it accompanies public and private enterprise, constancy of purpose, liberality of thought and aptitude for war: it exhibits itself prominently in strong and nervous constitutions, and assumes in very many instances the character of a curative instinct. The action of alcohol is believed by many eminent physiologists to arrest metamorphosis of the tissues of the body, and to lessen the actual amount of carbonic acid discharged; yet, just as medicine improperly administered is poison, so the immoderate use of alcohol generates disease and tends to death. This view of the question has led to the consideration whether intoxication should not, to a great extent, be medically studied and treated, and whether it is not frequently connected with the peculiarities and defects of the individual constitution. It is certainly substantiated that the craving for drink is symptomatically connected with maladies of the digestive organs, the heart, and the nervous system, especially with epilepsy, and that it is diminished in proportion as these disorders are cured. How far it can be affected by direct remedies is a scientific problem. Without absolutely agreeing with the Italian physician Salvatori, "that the habit of drunkenness is an affair of the apothecary," it is admitted on all sides that the "Pharmacopœia" does contain many drugs by which the stimulant appetite may be, apparently harmlessly, satisfied, but their effects have not yet been sufficiently observed and tested to determine whether the remedies may not generate fresh disease. Enough, however, is known fully to justify the establishment of such institutions for the treatment of habitual intoxication as already exist in the United States and in Scotland. If they were more generally accessible, and in more common use, they would be taken advantage of for preventive as well as for remedial purposes. As long as they are only frequented by persons whose health is already destroyed, and with whom excess has become almost a necessity of life, their work must be most difficult, and their prospects of success very doubtful; but if they were resorted to in the premonitory symptoms of drink-craving, and especially in the numerous melancholy cases of hereditary tendency, they might confer an inestimable benefit on mankind. I need not remind you of the

efforts of Dr. Dalrymple—whose sudden death is so severe a blow to the success of this meeting—to invest the heads of such refuges with a legal coercive authority, but which have not as yet been attended with success, owing, no doubt, to the fear of such possible abuses as have attended the treatment of lunacy, and which even our present elaborate system of inspection has not altogether corrected.

Prisons and prison organisation have from the commencement of this Society formed a prominent part of its deliberations; and, now that all gross inhumanity has disappeared from our penal discipline, and that the inspection of any ordinary prison leaves on the visitor rather an impression of an excess of care for the comfort of the criminal, compared with what would have been his probable condition in the ordinary struggle of life, you will appropriately discuss whether further reforms are not demanded by finer considerations of the duty of the State to the individuals it has taken under its immediate care, and by larger views of social policy than have hitherto prevailed. As long as the changes consisted in administrative ameliorations and mitigations of punishment, that recommended themselves to the common feelings incident to advancing civilisation —such as the limitation of the capital penalty, the purification of our prisons from moral and physical squalor, the restriction and diminution of corporal correction, the improved supervision of the prison staff, and the decent administration of the offices of religion —there was no stint of public expenditure, no objection on the score of exaggerated sentiment. But it is otherwise when it is required that prisons should be not only places of secure detention and of penal infliction, but of intellectual instruction and moral reform. The difficulty of the position does not seem to be surmounted by any one of the various theories from which the right of punishment can be deduced. If the principle of compensation which satisfied the early world be sufficient, then Society, placing itself in the room of the Avenger, has to encounter all the internal and external embarrassment which attends the exercise of that instinct or passion, under the restrictions of Christian morality and the civility of an ordered State. If the principle of utility is alone to be consulted, then the balance has to be struck between the amount of suffering necessary to frighten the criminal from the repetition of his offence, and yet not so severe as to render him the despairing enemy of society. If, again, the foundation taken be the imperative either of a logical proposition or of a moral sense of justice, we cannot leave out of view the liabilities to crime to which the prisoner has been inevitably subjected by the conditions of the class among whom he has been bred, even if we make no allowance for the evil propensities of his nature, or the invincible vices of his

temperament. And even if we are willing to go no further than the right of the strongest—and as yet, thank God, the Law in this country is the strongest—we must so direct and modify our force as to economise its energy and insure its impression. Perhaps the safest rule is to advocate alterations that are less the introduction of new principles than the better application of old ones. It has long been conceded that the old gregarious treatment of prisoners as outlaws of mankind, and the consequent carelessness as to whether they lived or died, whether they left their incarceration terrified and subdued, or desperate and dangerous, was both inhuman and impolitic; but an individualism which would exact that every inmate of a gaol or house of correction, was to be as scrupulously tended as a dependent or suffering member of a well-ordered household, would require a cost of supervision so much greater than is expended on the ordinary services of the State, and such an absorption of attention and sympathy by a particular class, that public opinion would be shocked, and probably react in the opposite direction.

Again, the feeling that vice and crime are the greatest of personal calamities, and to be regarded with infinite compassion, is the foundation of Christian ethics; but such an indulgence of it as would relieve the guilty from the sense of the rough reprobation and honest anger of their fellow-citizens, would be an abnegation of the common moral facts, on the acknowledgment of which the very safety of society depends. Yet assuredly these admissions need not prevent any improvement of sanitary arrangements, especially in the use of good water, which is deficient in some of our best prisons, or such an increase of instruction as would ensure that every prisoner, after a year's detention, should read, and after two years, read and write, or such a variety of trade-teaching as would suit the abilities of the pupil and the habits of the locality, so that, on his discharge, every prisoner might have some occupation to fall back upon: or, what seems to be singularly neglected, such a combination of secular with religious instruction, as would bring clearly to the minds of the prisoners the nature of the causes that had led to their present position, and the relative duties and interests of society and themselves. No great assistance can be expected from a comparison between our own systems and those of foreign countries. There can be no institutions where beneficial organisation must depend more on special national character, habits of life, and circumstances of locality, than those of a penal nature; the treatment of prisoners applicable to Italy or the United States, might be here as much out of place as if we fed our convicts on macaroni or maize. On the alimentary question, indeed, a far greater diversity might be advantageously allowed, even in this

country; and it might safely be left to the discretion of the local magistracy to regulate the dietary, so as to give the prisoners a sufficient, but not more than sufficient, supply of the common food to which they had been accustomed, instead of the quantity and quality being decided by the Home Office, with little or no regard to the natural produce of the district and customs of the people.

The difference of religion ought also to be taken into account more distinctly than it is. The Roman Catholic priest has other functions and powers than the Protestant pastor; and the strict method under which he conducts his ministrations may enable the authorities to permit him a freer access than they would do to ministers of religion more dependent on individual impulse. The execution of criminals within the walls of the prison may be now regarded as an established practice. When I brought this proposal for the first time before the House of Commons, it was coldly received, and strongly opposed by the advocates of the total abolition of the punishment of death—no doubt mainly from the belief, which the event has shown to be true, that the change in the mode of execution would diminish much of the repugnance to the penalty itself. I remember attempting to get the alteration made by Order in Council, just as the transference of the place of execution from Tyburn to Newgate had been made at the end of the last century, in the teeth of the analogous objections of the loss of public edification by the long transit of the culprit from the City to Hyde Park, not without an occasional halt at a public-house in Holborn or Oxford Street on the way. But Sir James Graham did not like to take upon himself the responsibility of the change; and it is better that it should now have been accomplished by an Act of Parliament than by an executive decree.

The whole position of prisoners after their discharge has been altered since the Act of Parliament which has recognised habitual criminals as a class, and appointed especial means for their supervision and rules for their apprehension. They now no longer disappear, and, under a change of name, begin a new life in any of our large masses of population. It might have been expected that, through this powerful engine of detection there would have been fewer crimes of a serious nature undiscovered, and that the proportion of apprehensions to the offences committed would have been very large. But the last volume of "Judicial Statistics," which the Act itself has enabled the able officials of the Home Department to compile with the accuracy of a muster-roll, does not confirm this hope, and shows that, especially in London, the amount of latent criminality is so great, as to justify general anxiety and precaution. Against this must be set the satisfactory statement of the diminution of the criminal class throughout the country, with the excep-

tion of some large towns, I am sorry to say, in my own county, where it is shown to have considerably increased, not certainly from the temptations of poverty, but in all probability from the sudden rise of wages, and the consequent free expenditure of the working-classes, inducing worthless characters to congregate about them, and often leading them away to evil courses. The success of the reformatory movement for the wiser and more humane treatment of children who have broken the law, may fairly claim the credit for a portion of the arrest of progressive crime. It originated, some thirty-five years ago, as do in this country so many beneficial measures, in the intelligent philanthropy of a few men, shocked at the anomaly of making a crime in the children of the poor of what would be a fault in the children of the rich, and of actually breeding up with perverted care, under the tutelage and instruction of the ordinary inmates of our gaols, successive generations of thieves and scoundrels. Of this feeling I had the honour, in the year 1851, to be the first exponent in the House of Commons ; and the main provisions of the Bill I then introduced, under the title of the Juvenile Offenders' Bill, followed up by the exertions of Sir John Pakington, Sir Charles Adderley, and others, are now the law of the land. It must not be forgotten that we had before us the admirable example of the French agricultural colony of Mettray, which, under the management of that energetic and discreet philanthropist, M. Demets, has maintained its ground through all the tumult of war and stress of revolution. It is mainly on the model of Mettray that has been founded and organised the farm-school of Redhill, the statistics of which I hope to bring before one of the Sections of the Association, and of which I will only now remark, that I look on the extraordinary and almost uniform rate of the reformation of the subjects of its discipline, as the result of the judicious application of healthful agricultural employment to the morbid mind and physical constitution of the children of the towns. Among the questions incidental to the present extension of educational interests, the suggestion of the transference of the reformatories from the care of the Home Office to that of the Minister of Education, has been suggested, and I have a letter from M. Demets, mentioning that some similar proposal has been made in France. M. Demets is strongly opposed to any such change, and, I think, with reason. It is most important, in the relation of reformatory schools to public opinion, that their penal character, in however mitigated a form, should be maintained. The children should never be allowed to forget that there has been an element of wrong-doing in their lives, and that they have been rescued from its effects by the benevolent interposition of the State and the community ; and, on the other ground, the virtuous poor should have no ground for belief that these children

are essentially in a better condition than their own, but that, though cleansed from the taint of crime, they still have the mark of misfortune. Thus, in the education itself, we, at least in the administration of the Redhill School, are sparing of anything like high or scholarly instruction ; our chief object is to send them out good working-men, with enough knowledge to make use of the opportunities we give them, but not to raise them to a superior condition of life.

The poor law in England remains the only expression of the principle which was so distinctly asserted in the Jewish legislation, that the claim of the poor on the rich is not only a duty of religion, but a right of law. The practice of the rest of Europe comes from the idea that the gift of alms is an act of Christian love, to be exercised without distinction of persons, even as God makes his sun to shine on the just and on the unjust. From the latter train of thought has resulted throughout Roman Catholic Europe the habit of indiscriminate almsgiving, and the toleration, if not the admiration, of mendicancy. With us, on the contrary, the pauper, if he has the privilege, has also the responsibility of legal status. He must prove his case, he must submit to the conditions and restrictions of his position, and he diminishes his charitable relation just in proportion as he asserts his legal rights. Hence, too, follows the unhappy consequence that the primary virtues of the lowest class are discouraged, and even turned into disqualifications. Thrift, cleanliness, even honesty, are not only no claims to poor relief, but they are impediments to the receipt of it. “Have you saved for a ‘bad day? Have you a decent home? Have you so good a character ‘that you can always get work?’” “Then,” says the relieving officer, and he can say nothing else, “do not come to me.” This is the penalty we must pay for the hard line that must be drawn in any matter of legal obligation. On the other hand, there is a spirit of independence, often going to the wild extremity of voluntary starvation, that does not exist elsewhere, and connects itself with what is noblest in the national character. It would seem, however, from the large increase in out-door relief, that this feeling, which it was the object of the bold act of the Whig Government some fifty years ago to generate and sustain, is now giving way to a degree that excites a well-founded apprehension in the minds of intelligent men, and that many interesting conferences have been held in the hope of devising some remedy in legislation or administration. In Switzerland, where the obligation of relief comes nearest to that of England, while we have been abrogating the laws of settlement so as to place no constraint on the freest search for employment or supply of labour, the cantonal restrictions are still so great that no man can marry without the probable means of supporting a family,

or remove into a neighbouring canton without offering a similar guarantee. A democratic government has often advantages in dealing with questions of this nature, which a more mixed constitution does not possess, and it will require a very great extremity to induce any abandonment on our part of the ancient security of the great social contract by which, on the one hand, the largest wealth may be accumulated without restriction or objection in the highest rank of society, while on the other, no man, even the lowest, need ever sink below the necessities of existence.

The great Act for the establishment of efficient elementary education throughout England and Wales, was accepted with an unanimity that could hardly have been anticipated in a country of such free and diverse opinions as ours. But the subject was very ripe for decision. Since the beginning of the century it had been growing in the moral sense, the religious conviction, and the political perception of the nation. The mitigation of the penal code, the increase of charitable institutions, the stronger conscientiousness of the aristocracy and gentry in their relations to the labouring classes, the enforced regulations in certain branches of manufacture with regard to the hours of labour and school-teaching of children, and, above all, the various extensions of the suffrage and the consequent dangers of organised ignorance, culminated in a somewhat indefinite demand for legislative interference which should secure, to the next generation at least, the use of the primary materials for intellectual and mental communication, and give to the children of the poorest a fair start in the competition of life. The close, it may be the indissoluble, connection between morality and theology in the English mind, had drawn the vast amount of donations contributed to educational purposes into denominational channels, and the large grants in aid contributed impartially by the State had naturally followed the same courses. The matter, therefore, where-with the Government had primarily to deal, was the class—in the larger towns and remote country districts very considerable—which those benevolences had not reached, and which were growing up in a condition of inevitable mental destitution. The scheme which, whatever be its ultimate fortune, connects Mr. Foster's name with the history of England, contemplated, not the establishment of any one class of school which might suit some places and not others, but a full supply of efficient schools such as might be adapted to the habits and inclinations of the people of each district. It was the principle of a rate in aid, not of physical, but of intellectual, pauperism. During the last three years the work of the Department of Education has consisted in ascertaining the supply required in each of the 15,000 districts in England and Wales, and how far that supply is met by satisfactory schools already in existence; in

proclaiming a deficiency wherever it exists, and settling with each locality how that deficiency is to be remedied. The voluntary exertions in building schools from 1839 to 1872, amounted to 4,279,000*l.*, and drew from the public taxation 1,693,000*l.* to meet these efforts, and it is now a matter of consideration for the inhabitants of each district, whether the necessary education can be wholly provided by voluntary means, assisted by school fees, or whether a School Board should be established, with powers to levy the adequate rate. All the large boroughs in England and several large parishes at once recognised the existence of a deficiency, and the example had been followed in many smaller parishes where education has been greatly neglected. The efforts of the Town Boards to fill up deficiencies may be fairly measured by the number of public loans required, pressure for which has been so severe as to require special legislation; while in the country districts the voluntary action has been so successful, especially in the last six months of 1870, as to leave comparatively few to be dealt with by the Department. It is, however, from this very exhibition of individual energy that has arisen the acrimonious difference which now threatens to become a party cry. The financial profit of the year of grace accorded by the Act to denominational assistance, may prove a dear bargain if it encumbers what ought to be a great measure of pacific administration with all the difficulties and accidents that are incidental to political conflict. Into that discussion it does not become us to enter. The Social Science Association, although interested in questions deeply connected with the national life, and avoiding no problem of public prosperity, has kept itself discreetly free from partisan and sectarian influences, and has maintained its serene and beneficent course equally under the presidency of Lord Brougham and the Duke of Northumberland. I will permit myself but two observations in the present attitude of the question. I would respectfully suggest to those persons or parties who regard with such anxious suspicion the possibility of the occupation of the education of the large majority of the English people by any one form or order of religious thought, that in all enterprises of that nature there exist forces of repulsion as well as of cohesion—that the monopoly of instruction in the hands of the Church of Rome did not prevent the Reformation, and that in our free and open time, any systematic attempt to confine the future mind of England within hard dogmatic limits, either religious or speculative, would utterly fail in its object. Again, it may not be out of place, nor an infraction of the right of every Englishman to make his individual notions a matter of national concern, if he can succeed in so doing, to implore both parties, even in the very heat of the battle, not to ignore a third party more essentially interested than either Church

or Nonconformity, Government or Opposition—the children themselves. The principle of compulsory attendance at school has something in it novel, and even alien to our usual habits of life: it interferes with the parental authority which our law so steadily upholds, and places the State *in loco parentis* in a manner repulsive to the independence of the English family. But the impossibility of carrying out any general system without this provision seems to be accepted by public opinion, and the cases where compulsion has been applied have met with no remonstrance. A large proportion of the districts have applied for these powers, while at the same time the indirect compulsion enforced under the Factory, Workshop, Mines, and Agricultural Children's Acts (though the last will not take effect till the year 1875), will cover nearly every class of the working community. What has been done to provide a supply of efficient teachers, and to rear up a body of pupil teachers from whom that supply will be hereafter recruited, may be gathered from the Education Reports. How far it would be possible to conduct present schools, or to supply future ones, with so special a class as that of men capable at once of imparting a sound and accurate knowledge of things in general, and of satisfying the scruples of the School Board member who objected to the singing of "God save 'the Queen,'" as an interference with religious and political liberty, is part of the great question which may have to be submitted to the country. The reorganisation of Endowed Schools is an important subsidiary measure, and, judging from the large number that have agreed to the new schemes, and the small number of recalcitrants, the measure may be regarded with satisfaction. Had the Commissioners shown a little more consideration for local interests and traditional sentiments, their reform would not have excited the antagonism, which in some cases has evoked the interposition of Parliament with success, and blinded the public judgment to the great good that has been effected and the many abuses that have been rectified. The amount of consideration to be attached to founders' wills must always remain rather a question of temperament and association, than of logical deduction, and the arbitrary selection of any particular period at which these dispositions should become obsolete would not meet the difficulty or silence recrimination. The soundest principle is that the transformation should be gradual, and that the advantage contemplated by the change should be palpable and distinct. Unfortunately, the progress of ideas is too liable to pass from the stagnant pool to the tumbling cataract, and happy is the people who can feel an abstract pleasure in a pacific reform, without that revolutionary passion which awakens and confuses the destructive instincts of man with his most honest hopes or his noblest aspirations.

In the higher education, the opening of Trinity College, Dublin, without distinction of religion, is the work of the enlightened members of that corporation, and of that remarkable man who seems to have derived additional intellectual faculty from the deprivation of the most valuable of our senses, Professor Fawcett. Our own two chief Universities have already been subjected to considerable reforms, adapting their large revenues and magnificent edifices to the wants and requirements of our time. But there is in prospect a change not of distribution, but of principle, in the allocation of property now vested in the separate colleges, which will appear by some to be the most serious educational revolution which has occurred in this country since the dissolution of the monasteries. Whatever complaints may have been made of the diversion of collegiate property to illegitimate uses, it has hitherto been assumed that the undergraduate members of a college who obtained high honours in the University, had a full right to expect to participate in its wealth and become part of its governing body. It seems that the question is now to be asked whether a man has a claim to any pecuniary reward whatever because he has condescended to take advantage of the great machinery of instruction which has been placed at his disposal, and has acquitted himself well in the pleasant pursuits of a literary life; whether this education is not its own reward, or whether the body that has conferred it on him has not rather some claim on his future labours than he on its endowments. The result of a negative answer to this moral demand, will be the application of the income of the colleges to the teaching powers either in each separate corporation in the University itself, or in other parts of the country. I do not think so sweeping a change can be effected without considerable resistance. The cardinal idea of a national education in which the chief, if not the only, stimulus to exertion should be the advance of the most meritorious to a higher school, may be ingenious and successful—the advantage of passing on to a higher grade of learning is immediate and palpable, and is accompanied not only with intellectual gain, but with social elevation. When, however, you come to apply the principle to the higher, and even highest, acquisitions of knowledge, to the studies which do not and cannot in any modern form of society secure a certain recognition and material benefit to those who have pursued them, it may fail, not from any defect in its soundness, but from the introduction of new and uncalculated elements. The objects and aim of our Universities has been believed hitherto to be the infusion of a general culture among the wealthier and easier classes, rather than an apprenticeship for the long contests of life. If you take away all the material temptations that would lead a man to spend a portion of his youth in the study of the graces of classic literature

or the powers of his own ; in the knowledge of the larger theories rather than the immediate applications of science ; in the comprehension of the principles that include the history and politics of society, and in the still higher processes which engage the intellect and imagination of mankind, it is very possible that you may neutralise the very intention with which the change has been made. You may come to have well-ordered professorships, and empty lecture-rooms, an apparent elevation of literature and science, and a real decline. Already the fear of wasting time in profitless study, and the pressure in the race of personal gain, have severely impaired the scholarly character of the clerical, legal, and medical professions, and when the prizes that our Universities have offered, and which for so many bridged over the first struggles and difficulties of practical life, are abolished, we may regret when too late the happy influences which they indirectly exercised over a wide range of the community.

The opening of the public service to general competition, has been hailed by a large portion of the public as a wise and generous concession on the part of the governing classes in the surrender of official and private patronage. Perhaps if it were more generally understood how great an incumbrance and trouble patronage is felt to be by public men, and how, with the rare exception of being able to satisfy private friendship and promote obscure merit, it brings with it neither pleasure nor gratitude, they would not be surprised to hear that it has been given up with so little resistance. As I see that the subject will form part of your sectional proceedings, in which I may have the opportunity of taking part, I will content myself with the observation, that we may have too much regarded this innovation in its relation to education, without comprehending its political significance. Before its establishment the service in the public offices was performed by a very diversified body of men, nominated by Heads of Departments, Peers, Members of Parliament, and other persons who might chance to possess political influence. They were educated to their work in their separate offices, and performed it with creditable efficiency. One effect of this patronage was the dispersion of these appointments among all classes of society ; but it was the poor and unfortunate who, by the interest their position excited, obtained the largest share. Another consequence was, that the public servants formed no cohesive body with common interests and common claims. The Civil Service is the creature of competition. How far it will add to the general content and happiness of British society remains to be seen. It may possibly result in the existence of a class ill-satisfied with their remuneration, chafing at their stationary or slowly-advancing position, conscious that they started in life with no obligations except to those who

supplied the money for their tutorship (and education of this kind is for the most part a matter of money), and to their own faculties of memory and rapid apprehension. Whether they will be especially patriotic and public-spirited, as becomes the servants of the State, is another question which I will not attempt to answer. Within the last few weeks the competition is extended to all the departments of the Home Office, to all clerkships in the offices of the Commissioner and Receiver of Police, the Inspector of Reformatory and Industrial Schools, and the Directors of Convict Prisons, as well as to the Junior Sub-Inspectorships of Factories—services which hitherto have been thought, if not to demand, at any rate to be the better for some special qualities which examinations cannot test, and some moral characteristics which are not the subjects of marks and figures. How long the Foreign Office will be allowed to retain its limited nomination I cannot tell, if we are to measure the appreciation of the value of those merits for which it is eminent, by the disregard implied in the indiscriminate opening of other departments which might have been supposed equally to require perfect confidence and high discretion.

The presidency of your Section of Trade and Economy, in the hands of Mr. Brassey, insures a treatment of those subjects extending beyond the ordinary range of statistical inference and area of our own immediate experience. The author of "Work and Wages" will be glad to follow out the principles he has laid down in his admirable essay, to the wider developments they have acquired under the pressure of recent events and fresh excitements of mankind. Considering the interest which has been excited both in this country and the rest of Europe, by the method of co-operation in trades and industrial employments, it is surprising it has not been more extensively applied. The London Co-operative Stores have started under circumstances of peculiar social favour, and appear to be flourishing; but it remains to be proved how much of this prosperity is owing to the enlightened discretion of their management and to the far-seeing honesty of their transactions, qualities admirable in themselves, insuring purity of goods, accuracy of account, and general confidence, but not necessarily dependent on the co-operative system. The retail trader with capital and conduct might do as much, and thus has no just cause to quarrel with the competition. The Whitwood Colliery, belonging to Messrs. Briggs, has tided over these difficult times without suspension of labour or serious differences with their men, who participated largely in those profits which, though somewhat diminished, will probably accompany the future operations of the coal trade. But, whether owing to the strong individuality of the British character, or to a general habit of suspicion, not only of the gains of their employers, but of the

direction of their own class, neither trade combination nor industrial partnership seems likely to make any immediate revolution in our commercial life. There has been a curious instance of this feeling in the fact of the recent proposal of Mr. Brand to his agricultural labourers in the south of England, to give them a proportionate interest in the profits of his farm, having met with no acceptance, in spite of the moderate wages of the district. On the other hand, a development of the principle of co-operation in rural industries seems to have occurred in the Western States of America, of such extensive proportions as may effect to a great extent the social relations of vast numbers of those rapidly increasing populations. The "farmers," or "granges," are counted not by hundreds, but by hundreds of thousands, and rising as they do in a newly-organised society and freshly-inhabited districts, they will offer the occasion for such a test and experiment of the principle as the world has not yet seen. They propose to supply the whole agricultural community of the far Western States with every article of food, machinery, furniture, and dress, without the intervention of any middlemen whatever, and, if they cannot acquire sufficient power over the present railroads to compel them to submit to any terms they choose to dictate, to establish an exclusive railway system of their own. As long as a combination of this nature is carried on solely by constructive and even repressive means, there is no ground on which they should not be allowed fair play, but if we find the tendency of all such schemes to be aggressive, then they require to be watched with all the care with which aristocratic or monarchial tyranny has been guarded against and put down in former times. The saying that the "despotism of the one is preferable to the despotism of the many," is so far true that the one, or even the few, can only assert and maintain their authority through the medium and with the assent of the many; whereas the many are, in the nature of things, absolute over the few. From the smallest strike to the vastest democracy, this is the dangerous principle which every lover of human liberty is bound to contend against and to modify, if he is unable to put it down. It has to be adroitly managed and to be treated with careful restriction as were the governing powers of old, and in the process of events, it may come to be limited just as they have been. Only do not let it be excused, or encouraged, or ever elevated into something sacred by a kind of surreptitious loyalty, which is just as unreasoning and as servile as the adulation of a bad king or a dissolute oligarchy. Do not palliate its violence, do not excuse its frauds; give it all the responsibility of power; bow to it when you can do nothing else, with the sense that it is the right of the strongest, but do not idolise it into a superior Justice or transcendental Benevolence. It is thus that a true social science

will regard the thoughts and hopes of Socialism. If it can work its way by legitimate influence on the minds of men; if it can divorce them from old associations; if it can lay a new foundation of philanthropy; if it can open fresh channels to intelligence and new paths of virtue, it deserves neither repression nor contempt, nor should it be judged wholly by its excesses. The horrors of the Paris Commune are no worse than those of St. Bartholomew or the Sicilian Vespers, and there have been plenty of mad resistances in history parallel with those now going on in Spain. The ultimate judgment will depend not on whether such things are done, but whether such things are vindicated. And yet the tendency to such outrages cannot be left wholly out of the consideration of the merits and virtues of the schemes themselves. A pretension to right society by destroying society, is simply nonsense. The various Socialist projects which came to a head in Paris in the June of 1848, were eminently ideal and pacific. They had their meaning in the aspirations of earnest men after an order of things where all wants should be remedied by the employment of all capacities, and by such a satisfaction of the natural instincts as to leave no place for vice or crime. Now the danger of such Utopias is, that when they are attempted and fail, their promoters attribute their want of success to some malignity on the part of existing society, and the transition from this conviction to the right of resistance is short and easy. When exacerbated by such circumstances as the humiliation of an unsuccessful war, or the unnatural tension of a long siege, it is no wonder that it should assume such dimensions of violence as occurred in France, though even there the hostility, not only to the superiorities of national wealth, but to the very arts and intelligence which separate barbarity from cultivation, was a new and hideous phenomenon. But the very fact that the subject-matter of the contest not only involves the passions and susceptibilities of mankind, but the very necessities of life itself, makes it impossible that a contest of this nature should come to the bitter end of complete victory or defeat, without misery starting up into rage, so that what begins as a social problem grows into internecine hatred.

One of the first parliamentary committees on which I served, was on the old combination laws, which, acting on the principle of *principiis obsta*, made illegal every attempt to enforce by united action, that interference between the employer and the employed which the individual could not accomplish. It was rather in anticipation than in experience of the discontent of the working classes, that those laws were repealed, and in the belief that the general law of conspiracy would be sufficient protection against abuse of the power which they could obtain. It is this security which it is

now sought altogether to remove, and the ill-will that is exhibited to its retention, is analogous to the dissatisfaction with which in former times kings and oligarchies have regarded any check on their authority. And it is a curious illustration of the dangers of irresponsible power, that the organisations to which I am alluding, regard the laws of political economy with the very same dislike that so many potentates have done who have found in them a natural resistance, not only to their wilful desires, but also to their benevolent projects and best desires to ameliorate the condition of their subjects. When after the terrible plague, called in our history the Black Death, and the consequent diminution of the population, King Edward III enacted the Statute of Labourers, which fixed the wages of the labour of the population and excited the socialist sedition of Jack Cade, he did no more than is now attempted by those who would overrule the relations of supply and demand, and the material dependence, or, more strictly speaking, the real identity of labour and capital. The revolt was suppressed, the statute became a nullity, and so will fail all designs, however ingenious, all projects, however generous, which depend on the violent transplantation, and not the grounded and natural growth of the organic facts of human society.

There is evidently something about Property in Land which peculiarly affects the imagination of mankind, but there has never been in this country the hunger for the soil which has occasionally maddened foreign peoples, and there has been a general devolution from the feudal times which has made the mass of the people the friend and protector of settled estates. It is for better historians than I am to inform you how it came about that the land of England became the property of comparatively few owners, while on the other side of the water France has been divided into an immense number of the peasant ownerships, not, as is commonly believed, by the violent confiscation of the Great Revolution, but for centuries before. The revolution relieved the small owner from the imposts and forced labour which he was bound to give to the "seigneur," but otherwise made little proprietary change. Nor has the occupation of small portions of land been with us remarkably successful where it does exist, as, for instance, with the statesmen of our north-western counties, either in the improvement of the soil or the social elevation of its possessors. Agricultural work for certain wages, and tenancies-at-will modified by the customs of different districts, or by contracts in the form of leases, have hitherto well satisfied the wants and views of our population. But speculations altogether of another nature have been started by a small, though energetic, class of politicians, and have received some consideration from what may be called higher and more com-

petent thinkers. It is not easy to attach any definite idea to the word "monopoly" in connection with the possession of land, which is so frequently in the mouths and writings of these reformers. There is no compulsory restriction or legal impediment to the possession of land by any number of persons, provided there is somebody to sell and somebody to buy; and the fewness of the owners depends entirely on social and financial, not on political causes. The historical and local concentration of a large amount of land in the hands of certain members of the governing class has come about, at least for any period of time which can be seriously regarded as influencing the question, without violence to any other man's rights, and without injury to the feelings of any portion of the community. It is an investment of capital, like another, made necessarily by wealthy men, the returns being comparatively small and uncertain. Whatever limitations or peculiar conditions are attached to its possession are purely voluntary, and affect, no doubt, considerably, certain other persons who stand in family relations to the possessor, but no one else. Even these may and will be done away with, as soon as the parties interested are sufficiently eager for the change to form a distinctive public opinion on the matter. Year after year Mr. Locke King has brought forward his Bill for the assimilation of landed and personal property in cases of intestacy, a measure not only unobjectionable in itself, but eminently useful as the abrogation of the only statute which, though depending itself on voluntary action, somewhat favours the vulgar notion of a compulsory law of primogeniture; and it has not passed into law simply because enough persons have not died intestate to impress the public mind with any sense of injustice. The power—a totally different thing from the obligation—of settling land on a person yet unborn, and which, even in the case of a son, has no earlier origin than the forensic subtleties of the sixteenth century—for the law of England abhors perpetuities—will probably be soon subject to further limitations, quite as much in the personal interests of the private owner as for any projected national advantage. There is, however, no greater fallacy than to believe that improvements of the land are materially checked by our present system of settlement. The capital invested in them is attracted there quite as much by solicitude for descendants as by the hope of present gain. The material advantage is, in short, very distant and problematical, and if the possessor thought of nothing but his own profit, his interest would often lie rather in exhausting the soil than in developing, at a present sacrifice, its future powers of production. This view is well stated in Lord Salisbury's able Report of the Committee on the Improvement of Land in cases of settled estates. The recommendations of that committee will probably result in a bill

for the extension of the powers of trustees to spend trust-money upon the improvements of land on redeemable mortgage, and enable limited owners to levy a charge for improvements, redeemable within a certain period exceeding the average expectation of life, or, if in concert with the remaindermen, to substitute his or their expectations for his own.

In concluding these desultory remarks, which I have preferred to any special dissertation, in the conviction that each separate subject will be far better in the hands of the distinguished heads of the separate Sections than it would be in mine, I may observe that out of so large a body as the Social Science Association, we cannot expect a year to pass without the loss of familiar faces and respected names. The address of Sir John Bowring on Economy and Trade at our Plymouth meeting was, I believe, his last appearance in public. Pupil of Jeremy Bentham, he did much not only to familiarise the British public with the important truths his master had enunciated in such ungainly style, but he contributed both in and out of Parliament to give them that practical application which has affected both the letter and the spirit of our legislation. He was a man of extensive culture, with a special ability for the study and appreciation of language, and a pleasant faculty to verse—not, perhaps, attaining the higher range of poetry, but evincing a fine sense of harmony and expression. But his special characteristic was an eager philanthropy and desire to promote in every form the material and mental prosperity of mankind. It must, therefore, have been to him a cause of peculiar pain to have found himself regarded by those with whom he had long acted in the political sphere, as having used the power intrusted to him in an important and distant settlement with unnecessary harshness and indiscreet violence. On the reasons for that imputation and its parliamentary consequences this is not the place to enter, but I know that the event left upon less partial and more moderate politicians an impression that justice had not been done to the well-known benevolence of his disposition, nor to those antecedents by which his conduct in a critical moment ought to have been interpreted and judged.

It seems almost disrespectful to speak now and here of Mr. John Mill in the summary manner the occasion requires. By the side of the sovereigns and legislators who govern the apparent destinies and mould the external constitutions of States, it is interesting to place the names of those to whom it is given to mark the epochs in the intellectual life and moral history of nations. Such men must not only be copious writers, but by style and method must rivet the attention and win the convictions of masses of mankind. Such was the influence of Coleridge on the generation of my youth, colouring with his metaphysical imagination not only the philosophy, but the

theology, and even the politics of his time. Such in my mature age has been the power of Thomas Carlyle, stamping his moral earnestness and rigid convictions of good and evil on our views of history, on our estimates of greatness in men, on our measure of the worth of thoughts and things, on our sense of the functions of language and the duties of expression. Such in these latter days has been the place of John Stuart Mill, in relation to the logical faculty, to the higher reason, and to the bold, critical application of principles, however distasteful to prejudice, to fashion, even to the uneducated conscience. The questions submitted to the consideration of this Society were in great part those he desired to see proved and tested, and though unwilling to attend its meetings and conferences, he expressed through its officers his continual interest in its work and his ardent sympathy with its success. Of this he could hardly have given a more signal proof than his expression of the political value he attached to the services of our distinguished colleague, Mr. Edwin Chadwick, which he, in the most public manner, estimated as not only equal but superior to his own. It is agreeable to speak of such men to an audience the majority of which belongs to the town of Norwich. I know no provincial city adorned with so many names illustrious in literature, the professions, and public life. Those of Taylor, Martineau, Austin, Alderson, Opie, come first to my recollection, and there are many more behind. And there is this additional peculiarity of distinction, that these are, for the most part, not the designations of individuals, but of families numbering each men and women conspicuous in various walks of life. For one of them I will ask you to permit me to pass from the expression of public esteem to that of private friendship, for one who, from a sick bed of twenty years, still looks out at the world of action with a mind interested in all that affects the well-being of humanity—Harriet Martineau.

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*On the RELATION of the BANKING RESERVE of the BANK of ENGLAND  
to the CURRENT RATE of INTEREST, with an INQUIRY into some  
of the CAUSES which have led to the HIGHER RATES CHARGED  
in RECENT YEARS.* By R. H. INGLIS PALGRAVE.

[Read before Section F, British Association, at Bradford, 22nd September, 1873.]

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### I.—*Introduction.*

THE weekly return of the Bank of England is always carefully studied, as supplying much and useful information on the position of the money market. The demands likely to be made on the "Reserve," and the proportion held by it to the "Liabilities," form the basis of most of the calculations on the probability of a rise or fall in the bank rate of discount. The form in which the usual statement is made out affords a great deal of information, but it leaves one or two very important points unnoticed. To supply this deficiency, Mr. J. B. Smith, M.P. for Stockport, recently moved for

a return, which has been published by order of the House of Commons. This return extends over the period from the commencement of 1857 to the end of 1872, and is similar in form to the Return in the Appendix to the Report from the Select Committee on Bank Acts, 1857. Taking these two returns together, we now possess a consecutive statement, on a uniform plan, from the date of the division of the two departments of the Bank of England, in 1844, to the close of 1872, containing particulars, which are not included in the ordinary returns, of the total amount of bills discounted, and total amount of temporary advances made by the Bank, and the balances of the London bankers.

The information thus obtained on the history of the working of the money market, during the last twenty-eight years, may be very useful to all who are engaged in commercial pursuits. These twenty-eight years have witnessed a very marvellous extension of the commerce of the country in general; and the extension of banking business has fully kept pace with the increase in other directions. These returns, carried on week by week, contain the record of many important events, but the very length of the returns is a bar to facility in consulting them, or in understanding the many important lessons which may be learned from their pages. It is often a difficult matter, in subjects of this nature, which depend on a vast multitude of details, to arrive at a just appreciation of the exact bearing which these details have on the questions at issue. The amount of detail, through its very quantity, has a tendency to obscure a distinct view of the case. I shall hope, therefore, that the analysis which I have prepared may be of service towards giving a history of the main alterations which have occurred in the position of the Bank of England during the time over which these returns extend, and may enable us to trace out some of the causes which have led to the greatly increased fluctuations and the higher rates which have prevailed in the money market during the last few years. I hope it will be clearly understood at the outset, that this statement is not intended either as a controversial investigation into the working of the Act of 1844, or as a critical inquiry into the conduct of the Bank of England. That great institution is, from its position, the acknowledged centre of our banking system; and an analysis of its transactions may enable us to see more clearly the progress of recent events in the financial world. I have drawn up, in order to render this analysis clear and readily intelligible, a series of tables. Into these I have endeavoured to condense the main points of the work of the Bank of England for the years from 1844 to 1872. The returns on which this analysis is based are, as I have mentioned, those in the Appendix to the Report from the Select Committee of the House of Commons on Bank Acts, 1857, and Returns of "the

“Bank of England” (in continuation of Appendix to the Reports from the Select Committee on Bank Acts, 1857), ordered by the House of Commons to be printed, 26th May, 1873. These returns are made up to the Saturday in each week from 31st August, 1844, to 31st October, 1857. The first return on the Wednesday is dated 4th November, 1857, and the returns from that date are on the Wednesday in each week. I have condensed these weekly statements into a series of yearly averages. I have done this with the utmost care, and I trust to have avoided any error of importance. But I am well aware how difficult a thing it is to secure strict accuracy in statements of this description.

## II.—*Description of the Tables Constructed for the purpose of this Analysis.*

Table I contains:—The yearly average of the deposits of the Bank of England.

The yearly average of the total liabilities, including seven-day and other bills.

The yearly average of the banking reserve.

The average proportion which the reserve bears to the liabilities.

The yearly average of the balances of the London bankers with the Bank of England.

The proportion the average yearly balances of the London bankers have borne to the banking reserve of the Bank of England.

The proportion which the reserve would bear to the liabilities, after deducting the London bankers' balances both from the reserve and the liabilities.

The average of “other” securities held by the Bank of England, after deducting the bills discounted and temporary advances.

The yearly average of bills discounted by the Bank of England.

The proportion of bills discounted to “other” securities.

The yearly average of the temporary advances.

The yearly average of the Bank of England circulation, divided between the country circulation of Bank of Eng-

land notes; and the London circulation of Bank of England notes. Also, the total circulation of Bank of England notes.

The yearly average of the bullion held.

The average minimum rate of discount charged by the Bank of England.

Table II contains the average, month by month, of the rate of interest charged by the Bank of England for the years 1844-56, 1857-72.

Table III contains the yearly average of the total of other securities of the Bank of England, years 1844-72.

Table IV contains the yearly average of bullion held by the Bank of England, years 1844-72.

Table V contains the proportion of the banking reserve of the Bank of England to the liabilities, on the nearest date given to each change in the rate of interest; and also of the proportion which the balances of the London bankers kept with the Bank of England bore to the reserve of the Bank itself on those dates.

On some occasions the total reserve of the Bank of England has not equalled the balances of the London bankers deposited with it. The proportion of the reserve to these balances is given on the occasions when this was the case.

[Table I.

TABLE I.—*Bank of England. Annual Averages of*

[100,000's omitted from this table in columns referring to money]

1 Date.	2 Annual Average of Total Deposits.	3 Annual Average of Total Liabili- ties.	4 Proportion of Liabilities to 1844. 1844=100.	5 Average Banking Reserve of Bank of Eng- land.	6 Proportion of Banking Reserve to 1844. 1844=100.	7 Proportion per Cent. of Banking Reserve to 1844. 1844=100.	8 Proportion per Cent. which the Average Reserve would bear to Liabilities after Deducting London Bankers' Balances from both Reserve and Liabilities.	9 Annual Average of London Bankers' Ba- lances.	10 Pro- portion of London Bankers' Balances to 1844.	11 Proportion per Cent. of London Bankers' Balances to Reserve of Bank of England.
	£	£		£		Per cent.	Per cent.	£		Per cent.
1844	13,3	14,5	100	8,5	100	58	55	0,9	100	10
'45	15,3	16,4	113	8,6	101	52	49	1,2	133	14
1846	19,2	20,1	138	8,5	100	42	38	1,5	167	18
'47	15,0	15,9	109	5,3	62	33	27	1,4	155	26
'48	15,0	16,0	110	9,7	114	60	54	2,3	255	24
'49	16,2	17,3	119	10,7	126	62	57	2,1	233	19
'50	17,6	18,8	129	11,2	132	60	55	1,8	200	16
1851	16,4	17,5	121	9,0	106	51	47	1,4	155	15
'52	18,8	20,1	138	12,7	149	63	56	3,1	344	24
'53	18,0	19,4	134	8,8	104	45	38	2,2	244	25
'54	14,7	15,8	109	7,2	85	45	35	2,6	289	36
'55	16,8	17,8	123	8,3	98	47	36	3,0	333	36
1856	16,0	16,8	116	5,7	67	34	19	3,0	333	53
'57	17,1	17,8	123	5,3	62	30	14	3,3	366	62
'58	20,0	20,8	143	12,0	141	58	46	4,6	511	38
'59	21,7	22,5	155	11,0	129	49	37	4,2	466	38
'60	20,1	20,9	144	8,4	99	40	25	4,3	478	51
1861	17,8	18,4	127	7,5	88	41	23	4,2	466	56
'62	21,1	21,7	149	10,1	119	46	30	5,1	567	50
'63	20,1	20,8	143	8,5	100	41	24	4,7	522	55
'64	20,1	20,6	142	7,5	88	36	18	4,9	540	65
'65	20,7	21,2	146	8,0	94	38	19	5,0	555	62
1866	21,6	22,2	153	6,6	78	30	2	6,2	689	94
'67	25,6	26,1	180	12,8	150	49	31	6,7	744	52
'68	25,1	25,6	176	11,8	139	46	27	6,8	755	58
'69	23,3	23,7	163	10,3	121	43	22	6,5	722	63
'70	24,8	25,4	175	12,4	146	49	31	6,6	733	53
1871	28,4	29,0	200	14,2	167	49	28	8,4	933	59
'72	28,8	29,3	202	12,2	143	42	21	7,6	844	62

Note.—The annual average of the total of "other" securities held by the Bank will

*Transactions of the Bank of England for the Years 1844-72.*[*ius £13,3 (Col. 2) = £13,300,000; £0,9 (Col. 9) = £900,000.*]

12	13	14	15	16	17	18	19	20	21	22	23	24
Annual average of "Other" Securities after Deducting Bills Discounted and Temporary Advances.	Pro- portion of "Other" Securities Bills (Col. 12) to 1844. 1844=100	Annual Aver- age of Bills Dis- counted to 1844. 1844=100	Proportion of Bills Dis- counted to Total of "Other" Securities. 1844=100	Proportion per Cent. of Bills Dis- counted to Total of "Other" Securities. 1844=100	Annual Aver- age of Tempo- rary Bills Dis- counted to 1844. 1844=100	Proportion of Tem- porary Advances to 1844. 1844=100	Pro- vincial Cir- cula- tion of Tempo- rary Advances to 1844. 1844=100	London Cir- cula- tion of Bank of Eng- land Notes.	Total Note Cir- cula- tion of Bank of Eng- land.	Annual Aver- age of Bullion to 1844. 1844=100	Pro- portion of Bullion to 1844. 1844=100	Aver- age Rate of Dis- count
£	£	£	Per cent.	£	£	£	£	£	£	£	£	P. ct.
5,4	100	2,7	100	28	1,3	100	6,5	13,7	20,2	13,5	100	2½
5,9	109	4,6	170	38	1,7	130	7,1	13,6	20,7	15,2	112	3
5,9	109	8,9	330	54	1,8	138	6,7	13,6	20,4	14,8	109	3¼
7,6	141	7,8	289	45	1,8	138	6,5	12,7	19,2	10,4	77	5
6,3	117	4,2	155	35	1,4	107	5,8	12,2	18,1	13,9	103	3¾
6,7	124	2,5	92	24	1,0	77	5,9	12,5	18,4	15,1	112	3
7,2	133	2,6	96	23	1,3	100	6,2	13,2	19,5	16,6	123	2½
7,0	130	4,5	166	36	1,1	84	6,4	13,1	19,5	14,5	107	3
7,8	144	3,0	111	26	0,6	46	6,9	14,9	21,9	20,6	152	2
8,9	165	5,2	192	34	0,9	69	7,8	14,8	22,6	17,5	130	3½
8,1	150	6,0	222	41	0,6	46	7,3	13,4	20,8	14,0	104	5
8,7	161	6,0	222	39	0,6	46	7,0	12,7	19,8	14,2	105	4¾
8,5	157	6,7	248	39	1,8	138	6,9	12,6	19,6	10,9	81	5¾
9,1	168	9,5	352	47	1,8	138	7,0	12,4	19,4	10,1	75	6¾
11,1	205	4,6	170	28	0,6	46	6,8	13,3	20,2	17,8	132	3¼
11,7	216	5,6	207	31	0,9	69	7,6	13,6	21,3	17,9	133	2¾
11,1	205	8,1	300	39	1,3	100	7,9	13,3	21,2	15,2	112	4¼
11,1	205	6,6	244	35	1,0	77	7,3	12,6	20,0	13,0	96	5½
10,9	202	6,2	230	33	1,5	115	7,4	13,3	20,8	16,4	121	2½
10,6	196	7,4	274	37	2,2	169	7,4	13,2	20,6	14,5	107	4½
9,8	181	8,6	318	42	1,9	146	7,5	13,0	20,5	13,5	100	7½
9,5	176	8,6	318	42	2,4	184	7,7	13,3	21,0	14,5	107	4¾
8,3	154	9,6	355	45	3,6	277	8,4	14,7	23,1	14,9	110	7
10,4	192	5,8	215	32	1,8	138	8,6	14,8	23,4	21,3	157	2½
10,6	196	5,0	185	29	1,8	138	8,9	14,9	23,9	20,8	154	2
9,1	168	5,8	215	34	1,8	138	8,8	14,5	23,4	18,8	139	3¼
8,5	157	6,4	237	34	3,7	284	8,8	14,4	23,3	20,4	151	3
9,4	174	6,4	237	34	2,9	223	—	—	24,4	23,5	174	3
10,6	196	6,9	255	32	3,9	300	—	—	25,5	22,6	167	4¼

nd in Table III. In this table the amount is divided between cols. 12, 14, and 17.

III.—*The Deposits Held by the Bank of England, the Banking Reserve of the Bank of England, and the Balances of London Bankers with the Bank of England.*

I now proceed to the examination of these tables, which, as I mentioned, are drawn up for the purpose of assisting us to form a complete analysis of the subject before us. The capital of the Bank of England is the largest of any known bank in the world, and amounts to 14,553,000*l.*; the rest, or accumulated and undivided profits, averages about 3 millions more. The total capital available, without taking the note issue into consideration, is therefore about 17½ millions. Col. 2 of Table I contains the yearly average of the total deposits of the Bank of England. Col. 3 contains the yearly average of the total liabilities of the Bank of England. As from the ordinary point of view we need not take the bank note circulation into account, as that concerns the issue department and not the banking department of the Bank of England, the only other liabilities to be taken into consideration are the seven-day and other bills. These have declined of late years. From averaging more than a million in 1844, they have declined to less than half that sum in recent years. In consequence, it will be observed that the amounts in col. 3 do not very greatly differ from those in col. 2, for the last ten or twelve years. To render the statement more clear, I have added a column marked 4, in which the proportion is given which the amounts of the total liabilities bore to that in 1844. By looking down these columns we shall see that it has not been till within the last eighteen or twenty years that the average deposits of the Bank have exceeded, or much exceeded, its capital; even at the present date the deposits are only about equal to the capital and half as much again. This is a very unusually strong position for any bank to occupy. The capital of most banks bears generally but a comparatively small proportion to the deposits. In Scotland the proportion has, of late years, been about one-sixth. In England a proportion of an eighth, or even smaller, is not unusual. The position of the Bank of England, therefore, in this respect is unusually and exceptionally strong. During the time under our notice a very considerable increase in the deposits and liabilities of the Bank has taken place. The total liabilities, which averaged about 14½ millions in 1844, averaged more than 29 millions in 1872, having thus been about doubled in the course of that time; and this growth, as will be seen by a reference to the table, has been gradual and continued. In a similar manner, though not in a like proportion, the average banking reserve has increased. The annual average of the reserve, with a statement of the proportion each year bears to 1844, will be found in cols. 5 and 6. The average reserve,

from being  $8\frac{1}{2}$  millions in 1844, has increased to 12 millions in 1872. In col. 7 is given the average proportion per cent. of reserve to the total liabilities. This average is generally very considerable. It has been as high as 63 per cent. in 1852; it was as low as 30 per cent. in 1866. It rose in the next year to 49 per cent., and has never averaged less than 42 per cent. since. Still, looking down col. 7, a distinct, though gradual, diminution in the proportion of the reserve to the liabilities becomes obvious. And it is not only the proportion which has diminished; the character and constitution of the reserve and of the demands which may be made upon it have, during the last twenty-five years, undergone a great, though a gradual alteration. This has been caused by the great increase in the balances which other bankers have kept with the Bank of England. The returns on which this analysis is based contain, as I have previously mentioned, a statement of the balances which the London bankers have kept with the Bank of England. We will now proceed to consider the amounts of these balances, and the proportion which they bear to the banking reserve.

Col. 9 contains the annual average of the bankers' balances. In these there is a very considerable and progressive increase, far larger than the increase in the reserve itself. That there had been a great increase of late years was a matter of conjecture, but the particulars, as I have stated, were not known before the publication of these returns, in which the amounts are stated, week by week. From them we learn that the average amount, which was less than 1 million in 1844, had become more than  $7\frac{1}{2}$  millions in 1872. The increase of the figures is progressive, and proceeds in a far more rapid proportion than the increase of the banking reserve of the Bank of England itself, or of any other branch of its business. Col. 10 contains the proportion which the balances of the London bankers bore to their amount in 1844, and enables us to follow their fluctuations with facility. In col. 11 the proportion per cent. of the average bankers' balances to the reserve is given. From being only 10 per cent. of the total reserve in 1844, the average increased to 94 per cent. in 1866, and though it has not always remained at that high proportion, in 1872 it was 62 per cent. Thus, from being but a small fraction of the reserve in the early years over which the table extends, the amount has increased to being considerably more than half the average reserve at the present time. It is the practice of the London banks to keep their principal reserve against immediate demands with the Bank of England, as being the easiest and safest plan. And as their business has extended, so they have also increased the amounts on deposit with the Bank of England. As far as I can trace the connection between the two, it appears to me that the amounts of the bankers' balances (the bankers' reserves) are

larger considerably now in proportion to their liabilities than they were twenty-five years ago; while the reserve of the Bank of England itself is somewhat smaller. No doubt a very considerable portion of the increase in the balances of the London bankers is due to the necessity of holding larger sums at the Bank of England, consequent on the improvements in the Clearing House system, and the admission of the principal London joint stock banks to that establishment, arranged in the years 1853 and 1854. The effect of those alterations may be traced in the diminution of the metropolitan note circulation of the Bank of England. The circulation, as distinguished between that issued in London and the provinces, is given in cols. 19 and 20 of this table. A distinct diminution in the London circulation is observable at the date just named. And from that date also the proportion borne by the balances of the London bankers to the reserve of the Bank of England, which had not ever previously exceeded 20 per cent. of that reserve, rises, till, as previously mentioned, in recent years it becomes considerably more than half the reserve. The enormous amounts which pass through the Clearing House, especially on Stock Exchange "settling days," when totals of 35 millions, 40 millions, and occasionally larger sums still are cleared, doubtless leave large balances to be adjusted through the "clearing bankers'" account with the Bank of England. Due preparation has to be made to meet these balances, and very large amounts must on these occasions stand to the credit of the bankers' accounts with the Bank.

The growth and development of this state of matters will be more clearly shown if we divide the twenty-seven years from 1845 to 1872, into three groups of nine years each.\* The averages are then as follows:—

	Proportion per Cent. of Reserve to Liabilities.	Proportion per Cent. of Bankers' Balances to Reserve.
Averages of the years 1846–54.....	51	22
" '55–63.....	43	48
" '64–72.....	42	63

In the earliest group, the proportion of the banking reserve was more than half the liabilities. This proportion, it will be seen, declines, while the proportion which the balances of the London bankers bear to the banking reserve itself, steadily increases. As the balances of the London bankers kept with the Bank of England

\* I have followed this arrangement into groups, as a similar division of the years since 1844 is made in my Paper on Banking, read before the Statistical Society in the March of this year.

are included among the total deposits of the Bank, it becomes clear how very considerable a part of the increase of those deposits is due to this source. The general effect may be traced by comparing the amounts in col. 2 with those in col. 9. It might be thought that these deposits are exactly those which are the most certain to diminish in times of pressure, but, on the contrary, they were greatly increased during the panics of 1857 and 1866. Between 4th and 25th of November, 1857, the bankers' balances increased 2 millions; from 3,400,000*l.* on 4th November, to 5,400,000*l.* on 25th November. In 1866, the action of the bankers was more rapid. On 9th May, 1866, their balances were 5,000,000*l.*; by the 16th they had increased nearly 3 millions, the figures being 7,900,000*l.* Beyond doubt, a great portion of these sums had been derived from the Bank of England itself, as the temporary advances during that time increased nearly 5 millions, and the amount of bills discounted also increased to about the same extent. The banking reserve of the Bank of England had diminished during the same time, from 9th to 16th May, more than 4 millions, from 4,900,000*l.* on the earlier date, to 700,000*l.* on the later. A great portion of that amount had probably been drawn by the London bankers. The immediate response to the call of necessity speaks very well for the manner in which the reserves of money at short dates were placed, for the prudence with which the banking business of the country generally was carried on, and also for the liberality shown by the Bank at a period of great national peril.

There have been several occasions, principally of late years, on which the banking reserve of the Bank of England has been smaller than the balances of the London bankers with the Bank.\* The details of the dates are as follows:—

*Number of Times that the Banking Reserve of the Bank of England was  
Insufficient to meet the Bankers' Balances.*

The amount to meet the Bankers' Balances.	
1847 .....	1
'56 .....	2
'57 .....	7
'58 .....	2
'65 .....	1
'66 .....	20
'71 .....	4
'72 .....	1
	38

\* On 11th November, 1857, the Bank of England reserve was.... £ 1,462,153  
London bankers' balances 1,642,000

On 16th May, 1866, the Bank of England reserve was ..... 1,202,810  
 " London bankers' balances ..... 7,935,000

Divided into three groups of nine years each, the results are as follows:—

Years 1846–54 .....	1
" '55–63 .....	11
" '64–72 .....	26
	—
	38

These figures mark very distinctly that the growth of the balances of the London bankers progressively increases in a larger proportion than the banking reserve of the Bank of England. If in the published accounts the amount of the balances of the London bankers were, as has been suggested, deducted from the ordinary deposits of the Bank, and a corresponding deduction made from the banking reserve, as in the form of account given below, it would become obvious at once that, on the 11th December, 1872, the last date given in Table V, the deposits of the public with the Bank of England, instead of being 18 millions, were 10 millions, and that the reserve available against the ordinary, as distinguished from the banking portion of its liabilities, was 6 millions instead of 13, and that the proportion of this reserve, instead of being 50 per cent., as the usual statement makes it, was only 30 per cent.

• *Bank of England. Account for the Week ending on Wednesday, the 11th day of December, 1872, Arranged so as to Show the Proportion of the Reserve to the Liabilities, after Deducting the Balances of the London Bankers' from both.*

ISSUE DEPARTMENT.

£	£
Notes issued .....	37,451,795
Government debts .....	11,015,100
Other securities.....	3,984,900
Gold coin and bullion .....	22,451,795
	<u>37,451,795</u>

BANKING DEPARTMENT.

£	£
Proprietors' capital .....	14,553,000
Rest .....	3,176,671
Public deposits .....	9,303,717
Other deposits 18,140,754	
Less, bankers' } balances ....	7,623,000
	<u>10,517,754</u>
Seven-day and other bills	392,842
	<u>37,943,984</u>
Government securities .....	13,259,873
Other securities .....	18,473,721
Notes .....	13,041,235
Less, per contra	7,623,000
	<u>5,418,235</u>
Gold and silver coin.....	792,155
	<u>37,943,984</u>

Proportion of reserve to liabilities, less bankers' balances from both, 30 per cent.

Proportion of reserve to liabilities, shown in ordinary form, 50 per cent.

The statement selected as an illustration is merely taken as being

the last in Table V, and not for any other reason. It would have been easy to select the accounts of other weeks, in which the proportion borne by the London bankers' balances to the deposits generally, and also the proportion of the London bankers' balances to the reserve, would have been considerably larger than in the one chosen, and consequently the proportion borne by the reserve to the remainder of the liabilities would have been far smaller, or to have taken a week's account in which the whole reserve was insufficient to meet the demands which might be made by the London bankers alone. I have preferred to take the account of a week which represents about the usual state of matters, and is not an extreme instance in any way. Attention would thus, if the ordinary liabilities of the Bank were distinguished from those incurred to its banking customers, be more readily drawn to those occasions on which the bank reserve of the Bank of England was insufficient to meet the balances of the London bankers. These balances are the ultimate reserve of all the banks in the kingdom. There is no other country in the world, with the banking system of which I am acquainted, in which the reserves of the banks are loaned out in the manner in which they are employed in this country. This has been the case here ever since modern banking has assumed its present form. This practice has, therefore, the plea of usage in its favour, and the plea of usage is an extremely strong one. It might be undesirable to say that these balances should never be loaned out; but it is clear that they form that portion of the resources of the Bank which should be employed with the utmost caution.

The balances of the London bankers with the Bank of England are included among its other liabilities. In another sense also these balances form a portion of the general banking reserve of the country. They are the only reserve of ready money kept by the bankers of the United Kingdom beyond the amount of cash in their tills. I do not mean, of course, by this to state that they are the only resources which the bankers of the country would have to fall back on in any time of pressure, for the amounts held at "call," and readily available in other forms, are very large—far larger than any of the figures now before us for consideration. But, as far as actual cash is concerned, these balances are the only sources from which an immediate supply can be obtained for any immediate need. And to include the amounts which these balances represent among the reserves of the Bank of England, and also among the banking reserves of the country at large, is really to reckon them twice over from a general point of view. I have, therefore, made an estimate of the amount which the liabilities of the Bank of England would be if the balances of the London bankers were deducted from them, and also of the amount at which the reserve of the Bank would stand if these balances

were not included in it; that is to say, of the position which the Bank of England would maintain if the London bankers held their own reserves in Bank of England notes, or in gold in their own safes.

It has not been possible, in the space to which this paper is of necessity confined, to exhibit what the effect of making up the accounts of the Bank of England in this manner would be on every statement analysed in Table V; but the general effect is shown in col. 8 of Table I. This column contains the proportion which the annual average reserve of the Bank of England would bear to the liabilities if the balances of the London bankers were deducted from those liabilities, and the same amount deducted also from the reserve. The gradual and progressive diminution in the proportion of reserve kept to the liabilities in general has been already noticed; but from this column we may see how much greater and more marked, especially in recent years, that diminution would have been had the accounts of the Bank been made up in such a manner as to distinguish the ordinary from the special banking liabilities. The average reserve of the Bank of England would, if the bankers' balances had not been included in it, have been in 1872 but 21 per cent. of the liabilities, and in 1866 but 2 per cent. We may thus see clearly in how great a degree the reserve of the Bank of England is composed of money which is really also at the same time the reserve of other banks, and retained against other liabilities than those which appear in this account—liabilities which are many times larger than those of the Bank of England, an estimate of the magnitude of which I have endeavoured to give in my paper read before the Statistical Society in the March of this year.\* From a banking position there is no doubt economy in making the Bank of England keep the reserve of the bankers, but it is equally certain that from a general point of view this tends to place any pressure always at one point—a point on which so many and varied demands, for domestic and foreign needs, the requirements for wages in England, of farmers in the north of Scotland, of dealers in Ireland, the requirements of great nations forming and increasing their gold circulation, all concentrate. Great unsteadiness in the value of money is the result. If the bankers were to keep their own reserves, and publish them weekly or monthly, these reserves would be much larger, business would be of a far more solid character, and more even in its tenor. It may be said that publicity on these points would be dangerous, and would lead to greater dangers than those to which we are already exposed in any time of pressure. I cannot, however, share in this apprehension. There is a great risk at such times to our highly complicated banking system

\* See pp. 27—152 of this vol.

from alarm among the ill-informed and ignorant. I think that their alarms might be soothed by a knowledge of the large resources held by the banks; and to those who have the conduct of the business such information might be of signal service. A knowledge of the position of the shoals and breakers in his course, essential at all times to the pilot, is doubly needed among the additional perils of the storm.

*IV.—Rate of Interest Charged by the Bank of England, Amount of Securities Held, Bills Discounted, and Temporary Advances made by the Bank.*

I have prepared a special set of tables to illustrate the relation between the reserve of the Bank of England and the current rate of interest. The average rate also requires some attention. It is given in col. 24 of Table I.

The rate of interest charged by the Bank has, on the whole, somewhat increased during recent years. If we divide the period now under consideration into two groups, between the years 1844-56, 1857-72, we shall find that the average of the earlier period is *3l. 15s. 3d.*; of the later, *4l. 3s.* It is also curious to observe that there is a periodic fluctuation from one season of the year to another. The details are as follows:—

TABLE II.—*Average, Month by Month, of the Rate of Interest Charged by the Bank of England for the Years 1844-56, 1857-72.*

1844-56.	£ s. d.	1857-72.	£ s. d.
January .....	3 15 -	January .....	4 4 5
February .....	3 15 -	February .....	4 3 9
March .....	3 15 -	March .....	3 16 9
April .....	3 15 9	April .....	3 18 9
May .....	3 13 4	May .....	4 11 2
June .....	3 10 10	June .....	4 2 9
July .....	3 10 -	July .....	4 - -
August .....	3 10 -	August .....	3 19 4
September .....	3 15 9	September .....	3 15 -
October .....	4 1 7	October .....	4 5 -
November .....	4 3 10	November .....	4 12 5
December .....	3 19 2	December .....	4 7 5
General average, 1844-56 ....	3 15 3	General average, 1857-72 ....	4 3 -

In both the periods into which this estimate is thus divided, the latter half of the year is the time of the highest charges. This is what we might naturally expect. The autumn and early winter months are the times of greatest business activity. The demands which the home harvest brings are great; the demands which foreign supplies of all kinds entail are more pressing still. The large amounts of produce then coming forward affect the money market; and a deficient harvest (should there be a short supply) usually manifests itself about the third week in October. The shipments of corn also

from America commence early in September, and intensify up to the middle of November. These causes, and others of a kindred nature which there is no need to specify, account for the autumnal demand. They do not, however, exist in the spring. In the months of April, May, and June, a corresponding, though slighter increase of pressure may be observed to that taking place in October, November, and December. The opening of those sources of supply which have been locked up by the severity of the winter, probably accounts for a considerable part of the increased demand for money indicated by a rise in its value. Some effect also may be assigned to increase in the Scotch note circulation at those dates. Any increase in that circulation beyond the limits assigned by the legislation of 1844 and 1845 causes an immediate demand on the reserve of the Bank of England. The increase in the Scotch circulation beyond the limit of 1845 did not become very distinctly marked till 1856. It has become very much more considerable of late. It will be observed that the rate in May was for the years 1844-56 lower than in every month but June in the first half of the year. For the years 1857-72, the rate in May was higher than in any month of the first half of the year. The particulars of the Scotch circulation for the years 1870-72 are as follows:—

*Authorised Limit of Scotch Bank Note Circulation, 2,749,271l.*

	Actual Circulation.
	£
<b>1870</b>	
21st May .....	4,970,000
8th October .....	4,964,000
5th November .....	5,181,000
3rd December .....	5,650,000
<b>1871.</b>	
20th May.....	5,184,000
7th December .....	5,353,000
4th November .....	5,195,000
2nd December .....	5,714,000
<b>1872.</b>	
18th May.....	5,369,000
5th October .....	5,472,000
2nd November .....	5,618,000
30th ,,, .....	6,210,000

It may be desirable to mention here the causes which lead to these periodic, though temporary, requirements for notes in Scotland.

“The main causes of the increased note issues in May and “November are undoubtedly these:—

“1st. The payments of rents and interests on mortgages, which, “in Scotland, are almost uniformly made at the half-“yearly terms of Whitsuntide (15th May), and Martin-“mas (11th November).

- “ 2nd. The settlement of all important transactions in heritable property, which are also fixed for the same terms.
- “ 3rd. The payment of household servants' wages, and in many cases, salaries, at the same period.

“ These payments are to a large extent made through the medium of bank notes, and thus they get into hands where they remain for a time, many of the parties who receive the notes having no bank account.

“ It is further to be noted :

- “ 1st. That on the 4th of the month an unusually large amount of bills falls due, and if the 4th happens on a Saturday (the day when the returns are made up) we generally look for a heavier return on that account.
- “ 2nd. The November returns are usually heavier than those in May, because of the requirements of the harvest, travellers, &c.
- “ 3rd. In the country districts the term-day is in many places regulated by the old style, and thus the payment of farm rents run on into June and December.
- “ 4th. The great increase this year is, no doubt, chiefly owing to the higher scale of wages, particularly in the mining districts, among the most improvident class of working people.”

I quote here from a letter recently addressed to me by a well known Scotch banker.

It would certainly appear to be desirable to mitigate the influence which these demands of a strictly domestic and home character exert. A better arrangement would provide what the existing law does not provide, a real security for the Scotch issues, without allowing these periodic and strictly temporary demands to press so sharply on the central reserve. Whenever the subject is reconsidered, it is to be hoped that this point will be attended to, and at the same time that security will also be required for the English country note issues. Opinions are sometimes expressed that it would be a desirable thing to take away the rights of issuing notes possessed by some country bankers, and to substitute instead the notes of the Bank of England. I cannot join in these opinions. It appears to me that the only result of such a change, under existing circumstances, would be to concentrate even more than at present the pressure in any time of difficulty on the reserves of the Bank of England, to increase the fluctuations in the rate of interest, and to cause higher rates to prevail. And I believe that the existing note issues of the country banks, properly secured, and with adequate and

special reserves held against them, might be made of great service in carrying on the business of the country.

The manner in which the deposits held by the Bank are invested requires our attention.

The securities held by the Bank of England are divided in the usual weekly statements between the two heads of "Government" and "other" securities. I have not thought it necessary to make any analysis of the Government securities held by the Bank, as a large proportion of these securities, and, in particular, the amounts held in the circulation department, are so permanent in amount that no detailed statement appeared likely to be generally useful. The "other" securities are not included as a whole in the returns on which this analysis is based, but as I have thought that a statement of their average amount would be of service in this investigation, I have supplied it from the ordinary weekly accounts.

The total annual average amount of the "other" securities will be found in Table III.

TABLE III.—*Annual Averages of the Total of "Other" Securities of the Bank of England, Years 1844-72.*

[£0,000's omitted, thus £9,4 = £9,400,000.]

1 Date.	2 Total of Other Securities of the Bank of England.	3 Proportion of Other Securities to 1844. 1844 = 100.	1 Date.	2 Total of Other Securities of the Bank of England.	3 Proportion of Other Securities to 1844. 1844 = 100.
	£			£	
1844.....	9,4	100	1859 ....	18,2	193
'45.....	12,2	130	'60 ....	20,5	218
1846.....	16,6	176	1861 ....	18,7	199
'47.....	17,2	183	'62 ....	18,6	198
'48.....	11,9	127	'63 ....	20,2	215
'49.....	10,2	108	'64 ....	20,3	216
'50.....	11,1	118	'65 ....	20,5	218
1851.....	12,6	134	1866 ....	21,5	229
'52.....	11,4	121	'67 ....	18,0	192
'53.....	15,0	160	'68 ....	17,4	185
'54.....	14,7	156	'69 ....	16,7	178
'55.....	15,3	163	'70 ....	18,6	198
1856.....	17,0	181			
'57.....	20,4	217	1871 ....	18,7	199
'58.....	16,3	173	'72 ....	21,4	228

The increase in the sums thus held is large, and in a general way proportionate to the increase in the deposits.

Mr. Thomson Hankey appears to indicate, in his remarks on the working and management of the Bank of England, that, while the

deposits should be invested in good banking securities, such as bills of exchange, loans for those periods on good securities, Government stocks, &c. "With regard to the investment of the capital, no part of this is required to be kept in reserve: all may be invested in interest-bearing securities, which should be of undoubted character, but not necessarily of the same readily convertible nature as that part which is held liable to recall of deposits."—"Hankey on Banking," pp. 13 and 14.

The capital and accumulated and undivided profits of the Bank of England, the "rest," amount together to about  $17\frac{1}{2}$  millions. I have separated the bills discounted and temporary advances from the remainder of the "other securities." It will be observed that this remainder, the annual average of which is given in col. 12 of Table I, has fluctuated less in amount for the last sixteen or eighteen years than the "bills discounted" or the "temporary advances." Guided by Mr. Thomson Hankey's remarks, we may suppose the sums indicated in col. 12 to be invested in loans to corporations for local improvements, to railways on their debentures, and in other securities more or less of a permanent character. Mr. H. L. Holland, Deputy-Governor of the Bank, stated in 1865 that the amount of railway debentures held at that time was about 4 millions. The fluctuations in the amount of these securities will be found marked in col. 13 of Table I.

We now proceed to consider the amount of bills discounted by the Bank of England. I have estimated the yearly average of these. The amounts are given in col. 14 of Table I. Col. 15 contains the proportion of the yearly average to that of 1844. The fluctuations in the amount of bills discounted is very considerable. The amount for 1868 is only about one-half that of 1866, and, curiously enough, was very nearly similar to the average of 1845. There are larger fluctuations also shown in the weekly statements than those between these annual averages.

In 1866 the highest amount was about 16 millions, the lowest about 7 millions.

„ '67	"	8	"	$4\frac{1}{2}$	"
„ '68	"	7	"	4	"
„ '69	"	7	"	4	"
„ '70	"	10	"	5	"
„ '71	"	11	"	4	"
„ '72	"	9	"	4	"

There is a considerable increase in this branch of the business of the Bank since 1844; but it will be observed that the average of the three years, 1845-47, rather exceeded the average of the three years 1870-72, and the whole amount, though large, can form but a very small part of the total amount of bills, both inland and foreign, in circulation. I have estimated the probable amount of these bills in

my paper read before the Statistical Society in March of this year. The amount in circulation, including foreign bills, is probably at the present time from 300 to 350 millions. Mr. Newmarch's estimate in 1851 was that the corresponding amounts then were from 180 to 200 millions. The influence of the Bank of England in the discount market is very great; but its influence in this direction would not appear to be so large as in some other portions of its business, since its discounts have not increased in the same proportion as the bills themselves. A large portion of the deposits, it must be remembered, have been invested in more permanent securities. The proportion of bills discounted to "other" securities is given in col. 16, and it will be observed that the proportion of the resources of the Bank placed in bills has rather diminished in recent years. The table shows that it is in times of difficulty and pressure that the discounters of bills have recourse to the Bank. In ordinary seasons the outside market is willing to accommodate its customers on slightly lower terms; and, in discounting bills, those who do the business at the lowest figure are sure to have the preference. In 1857 and 1866 the amounts are large. In ordinary times there are beyond doubt private houses, as well as public companies, who do a larger business of this description than the Bank of England.

The immediate wants of business are perhaps more distinctly to be found indicated among the temporary advances made by the Bank of England. No branch of business of the Bank appears to undergo greater fluctuations than this one, and in none are the influences of periods of pressure more distinctly marked. The amount for 1872 is exactly three times as much as that in 1844. The business done in 1852 was little more than a sixth part of that done twenty years later. The steady growth of this branch of the business is very remarkable during the last ten years. The annual averages will be found in col. 17, and the proportion of each year to the amount in 1844 is given in col. 18. The fluctuations from week to week are far greater than those between the yearly averages.

In 1866 the highest amount was about 8 millions, the lowest about 1 million.

„	'67	"	4	"	1	"
„	'68	"	4	"	1	"
„	'69	"	5	"	1	"
„	'70	"	9	"	2	"
„	'71	"	6	"	1	"
„	'72	"	10	"	2	"

The extension of the scale on which business is now done is curiously marked by the increase in these fluctuations during recent years. The requirements of occasional borrowers have been actually

greater, and the yearly averages higher, in the years 1870 and 1872, than even in the panic year of 1866.

V.—*Note Circulation of the Bank of England and Amount of Bullion Held.*

I now proceed to the consideration of the amount of notes issued by the Bank.

Annual averages of the note circulation will be found in cols. 19, 20, and 21 of Table I, which give the country circulation, the metropolitan circulation, and the amount of both these united. The extension of this portion of the business of the Bank was very small down to the year 1864. The increase up to that date was only about 4 per cent., which had advanced to 25 per cent. in 1872. The note circulation is issued partly in London, partly at the provincial branches of the Bank. I have been able to divide the circulation under these two heads down to the close of 1870. The returns accessible to me do not continue this division to a later date. And up to 1870 the increase in the circulation, as will be seen by col. 19, was rather in the country than in the London circulation, which will be found in col. 20. As the whole note circulation of England and Wales, including the notes issued by the private and joint stock banks, was 28,420,000*l.* in 1844, and had only risen to 30,630,000*l.* in 1872, the Bank of England notes issued at the country branches have probably taken the place of lapsed local note issues, and this accounts for their greater increase than that of the metropolitan circulation. The total increase is, however, small; smaller than the augmentation in any other portion of the business of the Bank of England, which these returns enable us to trace, and far smaller than the increase in the metallic circulation of the country, which I have estimated as being about 105 millions in 1872.\* Mr. Newmarch estimates the gold circulation as 36 millions in 1844.† While, therefore, there has been an increase in the amount of coin in circulation of something like 70 millions, the total note circulation of England and Wales is now only 2 millions larger than it was in 1844. It is also quite possible that this increase, small as it is, may prove to be only temporary, as fluctuations of from 1½ million to 2 millions are not uncommon between the average of one year and another in the note circulation.

To complete this analysis, I have estimated the annual average of bullion held by the Bank. These averages will be found in col. 22, with a column of the proportions on the same principle as

\* Estimate based on Professor Jevons's statement, Statistical Society's *Journal*, 1868, p. 446, and account of "Coinage of Gold for Twenty-Four Years," "Economist," 29th June, 1872.

† Tooke and Newmarch's "History of Prices," vol. vi, p. 701.

the preceding proportional statements. A considerable increase, larger on the whole than in the reserve, but smaller than that in the deposits, will be observed in this column. I have mentioned that there appears to be no relation whatever between the amount of notes issued and the rate of interest charged. Nor is it easy to trace an exact relation between the amount of bullion held and the bank rate. The average held in 1868 was more than 20 millions, with an average discount rate of 2 per cent.; the holding in 1872 was 22 millions, with an average rate of  $4\frac{1}{4}$  per cent., and the differences shown by the weekly returns are greater still. Thus 7 per cent. was charged on 9th November, 1872, with 19,750,000*l.* bullion held on the date of the nearest return, while 3 per cent. was charged on 4th November, 1869, with 18,500,000*l.*, more than a million less, held in a similar way. But on estimating the proportion of the banking reserve to the liabilities, we find that while it was 44 per cent. of these at the earlier, it was only 35 per cent. at the later date, as may be seen by a reference to the rates in Table III. Though the total amount of bullion held by the Bank is a very important thing, the rate of discount charged does not appear to be regulated by it.

TABLE IV.—*Annual Averages of Bullion Held by the Bank of England, Years 1844-72.*

1 Date.	2 Percentage of Average of Bullion to Average of Total Liabilities.	1 Date.	2 Percentage of Average of Bullion to Average of Total Liabilities.	1 Date.	2 Percentage of Average of Bullion to Average of Total Liabilities.
	Per cent.		Per cent.		Per cent.
1844.....	93	1853 .....	90	1863 .....	70
'45.....	92	'54.....	88	'64 .....	65
		'55.....	80	'65 .....	68
1846.....	73	1856.....	65	1866 .....	67
'47.....	65	'57.....	56	'67 .....	81
'48.....	87	'58.....	85	'68 .....	81
'49.....	87	'59.....	80	'69 .....	79
'50.....	88	'60.....	73	'70 .....	80
1851.....	83	1861.....	71	1871 .....	81
'52.....	—*	'62.....	75	'72 .....	77

\* Average of bullion  $2\frac{1}{2}$  per cent. more than total liabilities.

To render this more clear, I have stated in Table IV the percentage borne by the annual average of bullion with the Bank of England, to the annual average of the total liabilities. The fluctuations shown are considerable, the average, however, has hardly a tendency to increase. In 1852, the average of bullion was  $2\frac{1}{2}$  per cent. more than the average of the total liabilities. In 1847, 1856, and 1864, the average bullion was 65 per cent. of the total liabilities.

In 1857 it was only 56 per cent. of these. But though, generally speaking, the years when the average of bullion is low are those when the rate of interest—the annual average will be found in col. 24 of Table I—is high, yet it is not possible to trace the same connection between the bullion and the rate of interest as between the banking reserve and the rate of interest.

*VI.—The Proportion which the Banking Reserve Held by the Bank of England, bore to the Deposits, and the Bankers' Balances on the Nearest Return to the Date of each Change in the Bank Rate of Interest for the Years 1844-72 inclusive.*

In doing this I have included in the reserve the gold and silver coin held in the banking department, as well as the reserve of notes. I have also added to the liabilities in the shape of deposits the amount of short bills outstanding at each date. I mention this because the amount of the reserve of notes alone is given in the returns, and the short bills are not included in them. It appeared to me that in an estimate of the liabilities of the Bank of England both these items should be taken into account, and I have therefore done so, in order to insure accuracy in my statements. The influence, however, of these sums is but small. The results are in Table V.

This statement is given in two forms. In the first, the proportions are arranged according to the dates, the nearest to those on which the changes occurred. In the second, the return for each date over which a particular rate extends are arranged in the order of the highest proportion of reserve to deposits first, the other returns following to the minimum of each rate.

It will be observed that the proportion of the reserve to the liabilities was as follows during the sharpest pressure of the last three crises.

23rd October, 1847.—Reserve 14 per cent. of the liabilities. The London bankers' balances formed 81 per cent. of the reserve. Bank rate 8 per cent.

11th November, 1857.—Reserve 8 per cent. of the liabilities, but only sufficient to meet 31 per cent. of the bankers' balances. Bank rate 10 per cent.

16th May, 1866.—Reserve 5 per cent. of the liabilities, but only sufficient to meet 15 per cent. of the bankers' balances. Bank rate 10 per cent.

The increased severity of each crisis will be found marked in the smaller proportion of the reserve on each of the later occasions, both to the liabilities and the bankers' balances. The principle of the Act of 1844 was not actually infringed at any of these three dates.

TABLE V.—*Proportions of the Reserve of the Bank of England to Liabilities, and of the Balances of London Bankers to the Reserve, on the Nearest Date given to every Change in the Rate of Interest from 31st August, 1844, to 31st December, 1872.*

1 Bank Rate.	2 Date.	3 Proportion per Cent. of Reserve to Liabilities.	4 Proportion per Cent. of London Bankers' Balances to Reserve.	5 Proportion per Cent. of Reserve to London Bankers' Balances.
4	1844 31st August ....	67	16	—
2½	," 7th Sept. ....	68	10	—
3	1845 18th October....	38	43	—
3½	," 8th Nov. ....	38	23	—
3	1846 29th August....	58	20	—
3½	1847 16th January	44	20	—
4	," 23rd " ....	43	24	—
5	," 10th April....	20	73	—
5½	," 7th August ....	32	29	—
8	," 23rd October	14	81	—
7	," 20th Nov. ....	29	37	—
6	," 4th Dec. ....	36	28	—
5	," 24th " ....	46	17	—
4	1848 29th January	52	44	—
3½	," 17th June ....	67	15	—
3	," 4th Nov. ....	61	33	—
2½	1849 24th Nov. ....	66	13	—
3	1850 28th Dec. ....	48	10	—
2½	1852 3rd January	61	12	—
2	," 24th April....	64	40	—
2½	1853 8th January	48	35	—
3	," 22nd " ....	49	24	—
3½	," 4th June....	47	28	—
4	," 3rd Sept. ....	47	21	—
4½	," 17th " ....	40	27	—
5	," 1st October....	34	37	—
5½	1854 13th May ....	37	43	—
5	," 5th August ....	50	34	—
4½	1855 7th April.....	50	35	—
4	," 5th May ....	52	38	—
3½	," 16th June ....	63	30	—
4	," 8th Sept. ....	39	35	—
4½	," 15th " ....	40	30	—
5	," 29th " ....	33	43	—
5½	," 6th October....	31	45	—
7	," 20th " ....	29	52	—
6	1856 24th May .....	36	76	—
5	," 31st " ....	41	51	—
4½	," 28th June.....	49	34	—
5	," 4th October	23	68	—
6	," 11th " ....	21	67	—

TABLE V.—*Proportions of the Reserve of the Bank of England—Contd.*

1 Bank Rate.	2 Date.	3 Proportion per Cent. of Reserve to Liabilities.	4 Proportion per Cent. of London Bankers' Balances to Reserve.	5 Proportion per Cent. of Reserve to London Bankers' Balances.
7	1856	15th Nov. ....	27	77
6½	"	6th Dec. ....	36	48
6	"	20th " ....	37	39
6½	1857	4th April.....	23	58
6	"	20th June .....	38	39
5½	"	18th July .....	42	56
6	"	10th October .....	24	54
7	"	17th " ....	23	91
8	"	24th " ....	24	90
9	"	4th Nov. ....	15	—
10	"	11th " ....	8	—
8	"	23rd Dec. ....	34	78
6	1858	6th January	33	85
5	"	13th " ....	35	—
4	"	27th " ....	46	87
3½	"	3rd February	47	76
3	"	10th " ....	53	63
2½	"	8th Dec. ....	60	26
3½	1859	27th April.....	47	47
4½	"	5th May .....	42	56
3½	"	1st June .....	46	63
3	"	8th " ....	47	52
2½	"	13th July .....	48	57
3	1860	18th January	40	54
4	"	1st February	36	45
4½	"	28th March ....	35	36
5	"	11th April.....	26	75
4½	"	9th May .....	38	49
4	"	23rd " ....	43	47
4½	"	7th Nov. ....	38	66
6	"	14th " ....	37	55
5	"	28th " ....	41	59
6	1861	2nd January	31	60
7	"	9th " ....	31	97
8	"	13th February	36	56
7	"	20th March ....	41	46
6	"	3rd April.....	38	51
5	"	10th " ....	39	69
6	"	15th May .....	36	53
5	"	31st July .....	39	62
4½	"	14th August....	43	58
4	"	28th " ....	46	60
3½	"	18th Sept. ....	48	52
3	"	6th Nov. ....	43	62
2½	1862	8th January	44	71
3	"	21st May .....	46	47
2½	"	9th July .....	42	69
2	"	23rd " ....	45	68
3	"	29th October	39	65

TABLE V.—*Proportions of the Reserve of the Bank of England—Contd.*

1 Bank Rate.	2 Date.	3 Proportion per Cent. of Reserve to Liabilities.	4 Proportion per Cent. of London Bankers' Balances to Reserve.	5 Proportion per Cent. of Reserve to London Bankers' Balances.
4	1863 14th January	39	69	—
5	" 28th " ....	40	52	—
4	" 18th February	46	45	—
3½	" 22nd April.....	43	62	—
3	" 29th " .....	43	48	—
3½	" 13th May .....	41	49	—
4	" 20th " .....	38	54	—
5	" 28th October....	36	77	—
6	" 4th Nov. ....	31	72	—
8	" 2nd Dec. ....	32	69	—
7	" 23rd " .....	40	48	—
8	1864 20th January	33	61	—
7	" 10th February	38	47	—
6	" 24th " .....	44	47	—
7	" 13th April.....	32	75	—
9	" 4th May .....	28	67	—
8	" 18th " .....	33	70	—
7	" 25th " .....	37	65	—
6	" 15th June .....	40	55	—
7	" 27th July .....	33	73	—
8	" 3rd August....	29	85	—
9	" 7th Sept. ....	35	70	—
8	" 9th Nov. ....	40	85	—
7	" 23rd " .....	45	71	—
6	" 14th Dec. ....	48	51	—
5½	1865 11th January	39	82	—
5	" 25th " .....	44	63	—
4½	" 1st March ....	44	53	—
4	" 29th " .....	41	45	—
4½	" 3rd May .....	36	65	—
4	" 24th " .....	41	54	—
3½	" 31st " .....	41	56	—
3	" 14th June .....	45	46	—
3½	" 26th July .....	33	81	—
4	" 2nd August....	31	77	—
4½	" 27th Sept. ....	33	67	—
6	" 4th October....	24	83	—
7	" 11th " .....	23	86	—
6	" 22nd Nov. ....	43	57	—
7	" 27th Dec. ....	34	65	—
8	1866 3rd January	26	—	97
7	" 21st February	45	58	—
6	" 14th March ....	45	51	—
7	" 2nd May .....	30	88	—
9	" 9th " .....	29	87	—
10	" 16th " .....	5	—	15
8	" 15th August....	21	—	68
7	" 22nd " .....	24	—	69
6	" 29th " .....	29	—	87
5	" 5th Sept. ....	30	—	96

TABLE V.—*Proportions of the Reserve of the Bank of England—Contd.*

1 Bank Rate.	2 Date.	3 Proportion per Cent. of Reserve to Liabilities.	4 Proportion per Cent. of London Bankers' Balances to Reserve.	5 Proportion per Cent. of Reserve to London Bankers' Balances.
4½	1866 26th Sept.....	36	77	—
4	" 7th Nov. ....	37	74	—
3½	" 19th Dec. ....	44	51	—
3	1867 6th February	44	63	—
2½	" 29th May .....	47	49	—
2	" 24th July .....	53	64	—
2½	1868 18th Nov. ....	40	61	—
3	" 2nd Dec. ....	39	64	—
4	1869 31st March ....	34	68	—
4½	" 5th May .....	35	67	—
4	" 9th June .....	44	65	—
3½	" 23rd " .....	48	53	—
3	" 14th July .....	44	69	—
2½	" 18th August....	54	55	—
3	" 3rd Nov. ....	44	56	—
4	1870 20th July .....	42	66	—
5	" 27th " .....	36	75	—
6	" 3rd August ....	34	85	—
5½	" 10th " .....	38	85	—
4½	" 17th " .....	42	79	—
4	" 24th " .....	45	78	—
3½	" 31st " .....	46	72	—
3	" 14th Sept. ....	51	59	—
2½	" 28th " .....	55	48	—
3	1871 1st March ....	41	64	—
2½	" 12th April.....	43	58	—
2¼	" 14th June .....	59	38	—
2	" 12th July .....	51	74	—
3	" 20th Sept. ....	50	49	—
4	" 27th " .....	37	70	—
5	" 4th October....	31	—	90
4	" 15th Nov. ....	48	83	—
3½	" 29th " .....	53	62	—
3	" 13th Dec. ....	54	47	—
3½	1872 3rd April.....	35	60	—
4	" 10th " .....	33	80	—
5	" 8th May .....	33	75	—
4	" 29th " .....	40	58	—
3½	" 12th June .....	45	46	—
3	" 19th " .....	46	45	—
3½	" 17th July .....	41	70	—
4	" 18th Sept. ....	39	69	—
4½	" 25th " .....	37	71	—
5	" 2nd October	32	79	—
6	" 9th " .....	32	93	—
7	" 6th Nov. ....	35	70	—
6	" 27th " .....	46	63	—
5	" 11th Dec. ....	50	55	—

TABLE V.—*Proportions of the Reserve of the Bank of England—Contd.*

1 Bank Rate.	2 Date.	3 Proportion per Cent. of Reserve to Liabilities.	4 Proportion per Cent. of London Bankers' Balances to Reserve.	5 Proportion per Cent. of Reserve to London Bankers' Balances.
10	1857 11th Nov.....	8	—	31
"	'66 16th May .....	5	—	15
9	1864 7th Sept.....	35	70	—
"	'66 9th May .....	29	87	—
"	'64 4th " .....	28	67	—
"	'57 4th Nov. ....	15	—	77
8	1864 9th Nov. ....	40	85	—
"	'61 13th February	36	56	—
"	'57 23rd Dec. ....	34	78	—
"	'64 20th January	33	61	—
"	'64 18th May .....	33	70	—
"	'63 2nd Dec. ....	32	69	—
"	'64 3rd August....	29	85	—
"	'66 3rd January	26	—	97
"	'57 24th October....	24	90	—
"	'66 15th August....	21	—	68
"	'47 23rd October	14	81	—
7	1864 23rd Nov. ....	45	71	—
"	'66 21st February	45	58	—
"	'61 20th March ....	41	46	—
"	'63 23rd Dec. ....	40	48	—
"	'64 10th February	38	47	—
"	'64 25th May .....	37	65	—
"	'72 6th Nov. ....	35	70	—
"	'65 27th Dec. ....	34	65	—
"	'64 27th July .....	33	73	—
"	'64 13th April....	32	75	—
"	'61 9th January	31	97	—
"	'66 2nd May .....	30	88	—
"	'47 20th Nov. ....	29	37	—
"	'55 20th October	29	52	—
"	'56 15th Nov. ....	27	77	—
"	'66 22nd August....	24	—	69
"	'57 17th October	23	91	—
"	'65 11th " ....	23	86	—
6½	1856 6th Dec. ....	36	48	—
"	'57 4th April.....	23	58	—
6	1864 14th Dec. ....	48	51	—
"	'72 27th Nov. ....	46	63	—
"	'66 14th March ....	45	51	—
"	'64 24th February	44	47	—
"	'65 22nd Nov.....	43	57	—
"	'64 15th June .....	40	55	—
"	'57 20th " .....	38	39	—
"	'61 3rd April.....	38	51	—
"	'56 20th Dec. ....	37	39	—
"	'60 14th Nov. ....	37	55	—

TABLE V.—*Proportions of the Reserve of the Bank of England—Contd.*

1 Bank Rate.	2 Date.	3 Proportion per Cent. of Reserve to Liabilities.	4 Proportion per Cent. of London Bankers' Balances to Reserve.	5 Proportion per Cent. of Reserve to London Bankers' Balances.
6	1847	4th Dec. ....	36	28
"	'56	24th May .....	36	76
"	'61	15th " .....	36	53
"	'70	3rd August....	34	85
"	'58	6th January	33	85
"	'72	9th October	32	93
"	'61	2nd January	31	60
"	'63	4th Nov. ....	31	72
"	'66	29th August ....	29	—
"	'57	10th October	24	54
"	'65	4th " ....	24	83
"	'56	11th " ....	21	67
$5\frac{1}{2}$	1857	18th July .....	42	56
"	'65	11th January	39	82
"	'70	10th August ....	38	85
"	'54	13th May .....	37	43
"	'47	7th August....	32	29
"	'55	6th October	31	45
5	1854	5th August ....	50	34
"	'72	11th Dec. ....	50	55
"	'47	24th " .....	46	17
"	'65	25th January	44	63
"	'56	31st May .....	41	51
"	'60	28th Nov. ....	41	59
"	'63	28th January	40	52
"	'61	10th April ....	39	69
"	'61	31st July .....	39	62
"	'63	28th October	36	77
"	'70	27th July .....	36	75
"	'58	13th January	35	—
"	'53	1st October	34	37
"	'55	29th Sept.....	33	43
"	'72	8th May .....	33	75
"	'72	2nd October	32	79
"	'71	4th " ....	31	—
"	'66	5th Sept.....	30	—
"	'60	11th April.....	26	75
"	'56	4th October	23	68
"	'47	10th April.....	20	73
$4\frac{1}{2}$	1855	7th April.....	50	35
"	'56	28th June.....	49	34
"	'65	1st March ....	44	53
"	'61	14th August....	43	58
"	'59	5th May .....	42	56
"	'70	17th August....	42	79
"	'53	17th Sept.....	40	27
"	'55	15th " .....	40	30
"	'60	9th May .....	38	49
"	'60	7th Nov. ....	38	66

TABLE V.—*Proportions of the Reserve of the Bank of England—Contd.*

1 Bank Rate.	2 Date.	3 Proportion per Cent. of Reserve to Liabilities.	4 Proportion per Cent. of London Bankers' Balances to Reserve.	5 Proportion per Cent. of Reserve to London Bankers' Balances.
4½	1872 25th Sept.....	37	71	—
"	'65 3rd May .....	36	65	—
"	'66 26th Sept.....	36	77	—
"	'60 28th March ....	35	36	—
"	'69 5th May .....	35	67	—
"	'65 27th Sept.....	33	67	—
4*	1844 31st August ....	67	16	—
"	'48 29th January	52	44	—
"	'55 5th May .....	52	38	—
"	'71 15th Nov.....	48	83	—
"	'53 3rd Sept.....	47	21	—
"	'58 27th January	46	87	—
"	'61 28th August....	46	60	—
"	'63 18th February	46	45	—
"	'70 24th August ....	45	78	—
"	'69 9th June .....	44	65	—
"	'47 23rd January	43	24	—
"	'60 23rd May .....	43	47	—
"	'70 20th July .....	42	66	—
"	'65 29th March ....	41	45	—
"	'65 24th May .....	41	54	—
"	'72 29th " .....	40	58	—
"	'55 8th Sept.....	39	35	—
"	'63 14th January	39	69	—
"	'72 18th Sept.....	39	69	—
"	'63 20th May .....	38	54	—
"	'66 7th Nov.....	37	74	—
"	'71 27th Sept.....	37	70	—
"	'60 1st February	36	45	—
"	'69 31st March ....	34	68	—
"	'72 10th April.....	33	80	—
"	'65 2nd August....	31	77	—
3½	1848 17th June .....	67	15	—
"	'55 16th " .....	63	30	—
"	'71 29th Nov.....	53	62	—
"	'61 18th Sept.....	48	52	—
"	'69 23rd June.....	48	53	—
"	'53 4th " .....	47	28	—
"	'58 3rd February	47	76	—
"	'59 27th April.....	47	47	—
"	'59 1st June .....	46	63	—
"	'70 31st August ....	46	72	—
"	'72 12th June .....	45	46	—
"	'47 16th January	44	20	—
"	'66 19th Dec. .....	44	51	—
"	'63 22nd April ....	43	62	—

\* This is the first statement in the returns, and marks the point at which the Act of 1844 came into operation.

TABLE V.—*Proportions of the Reserve of the Bank of England—Contd.*

1 Bank Rate.	2 Date.	3 Proportion per Cent. of Reserve to Liabilities.	4 Proportion per Cent. of London Bankers' Balances to Reserve.	5 Proportion per Cent. of Reserve to London Bankers' Balances.
$3\frac{1}{2}$	1863 13th May .....	41	49	—
"	'65 31st " .....	41	56	—
"	'72 17th July .....	41	70	—
"	'45 8th Nov. .....	38	23	—
"	'72 3rd April.....	35	60	—
"	'65 26th July .....	33	81	—
3	1848 4th Nov. .....	61	33	—
"	'46 29th August ....	58	20	—
"	'71 13th Dec. .....	54	47	—
"	'58 10th February	53	63	—
"	'70 14th Sept.....	51	59	—
"	'71 20th " .....	50	49	—
"	'53 22nd January	49	24	—
"	'50 28th Dec. .....	48	10	—
"	'59 8th June .....	47	52	—
"	'62 21st May .....	46	47	—
"	'72 19th June.....	46	45	—
"	'65 14th " .....	45	46	—
"	'67 6th February	44	63	—
"	'69 14th July .....	44	69	—
"	'69 3rd Nov. .....	44	56	—
"	'61 6th " .....	43	62	—
"	'63 29th April.....	43	48	—
"	'71 1st March ....	41	64	—
"	'60 18th January	40	54	—
"	'62 29th October....	39	65	—
"	'68 2nd Dec. ....	39	64	—
"	'45 18th October	38	43	—
$2\frac{1}{2}$	1844 7th Sept. ....	68	10	—
"	'49 24th Nov. ....	66	13	—
"	'52 3rd January	61	12	—
"	'58 8th Dec. .....	60	26	—
"	'70 28th Sept. ....	55	48	—
"	'69 18th August....	54	55	—
"	'53 8th January	48	35	—
"	'59 13th July .....	48	57	—
"	'67 29th May .....	47	49	—
"	'62 8th January	44	71	—
"	'71 12th April.....	43	58	—
"	'62 9th July .....	42	69	—
"	'68 18th Nov. ....	40	61	—
$2\frac{1}{4}$	1871 14th June .....	59	38	—
2	1852 24th April.....	64	40	—
"	'67 24th July .....	53	64	—
"	'71 12th " .....	51	74	—
"	'62 23rd " .....	45	68	—

*General Averages of preceding Table.*

Bank Rate.	Times Charged.	Average Proportion per Cent. of Reserve to Liabilities.	Average Proportion per Cent. of London Bankers' Balances to Reserve.	Average Proportion per Cent. of Reserve to London Bankers' Balances.
10	2	6	—	23
9	4	26	74	—
8	11	29	75	—
7	18	33	60	—
6½	2	29	53	—
6	22	35	60	—
5½	6	36	56	—
5	21	36	59	—
4½	16	39	54	—
4	26	42	56	—
3½	20	45	50	—
3	22	46	49	—
2½	13	51	43	—
2¼	1	59	38	—
2	4	53	61	—
Number of changes in rate ...		188	—	—

I have thought it well, while investigating this point, to give an arrangement of these proportions in order of dates, as well as according to each rate, because the one arrangement is of very material assistance in understanding the other. Thus, in looking at the proportion of reserve to deposits during the prevalence of the rate of 4 per cent., we find that rate charged on 2nd August, 1865, with no greater reserve than 31 per cent. of the deposits; a proportion at which, from the information supplied by other portions of this table, it might have been more naturally expected that 7, 8, or even 9 per cent. would have been charged. On looking to the chronological table, the explanation of this becomes clear. 2nd August, 1865, marks nearly the commencement of that rise in the rate of discount which culminated in the crisis of 1866. Barely six weeks before, there had been a reserve of 45 per cent., with a rate of 3 per cent., and during the whole of the twelve months preceding and following the bank rate had been subject to very extraordinary fluctuations. It is perfectly true that the bank rate has in many cases fluctuated considerably, while the average of the

proportions of the reserve of notes has remained almost the same. Thus, by looking down the general averages of the proportion of the reserve to deposits, on the nearest dates corresponding with each change, it will be seen that three different rates, 6,  $5\frac{1}{2}$ , and 5 per cent. have all been charged with an average proportion of reserve, of about 35 per cent.; and, what might have been as little expected, the fluctuations of the reserve have been greater while 5 per cent. has been charged (from 50 to 20 per cent.) than while 6 per cent. has been charged (in this case from 48 to 21 per cent.). Still, though individual cases may be found which differ from the average, yet the main principle, that a low bank reserve is accompanied by a high rate of interest, generally appears throughout, and we may become aware how important a thing the amount kept in reserve by the Bank of England is, and how great an effect the decline, observable of late years, in the proportion of that reserve to the banking liabilities may produce. This diminution at first sight appears but small. On referring, however, to the general averages on p. 560, it becomes clear how great a variation in the rate of interest may result from a small diminution in the proportion of the reserve to the liabilities. And when we compare the proportion between the general averages of the reserve for the groups of years 1846-54 and 1864-72, and the general averages of the rate of interest charged during those two periods, we shall find a close correspondence between them. During the years—

1846-54, the average proportion of reserve to liabilities was 51 per cent.

'64-72	"	"	4 <sup>2</sup>	"	£ s. d.
1846-54 the average rate of interest was .....				3	8 11
'64-72	"			4	3 4

The average reserve is one-fifth less at the later period, and the rate of interest charged corresponds exactly with this proportion, for it is one-fifth more. We cannot expect to find an exact correspondence on every occasion, especially in times when the rate is exceptionally high or exceptionally low; but this example shows how strong a tendency the rate of interest has to follow the proportion of reserve, and how important in its effects an apparently small diminution in that reserve may be.

In order to give a more distinct idea of the magnitude of the sums concerned, and of their proportions to the general business of the country, I add the amounts of the reserve of the Bank of England, of the London bankers' balances, and of the weekly returns of the Clearing House at the nearest date to each alteration of the Bank of England rate during the year 1872.

	Bank Rate.	Bank of England Reserve.	London Bankers' Balances.	Clearing Returns.
1872.		£	£	£
3rd April.....	3½	11,336,000	6,686,000	86,699,000
10th   "       .....	4	10,488,000	8,315,000	106,548,000
8th May .....	5	9,929,000	7,463,000	101,388,000
29th   "       .....	4	11,472,000	6,650,000	85,523,000
12th June.....	3½	12,963,000	6,079,000	91,539,000
19th   "       .....	3	13,592,000	6,175,000	130,995,000
17th July .....	3½	11,498,000	8,028,000	135,894,000
18th September	4	11,351,000	7,870,000	118,792,000
25th   "       .....	4½	11,021,000	7,896,000	94,004,000
2nd October ....	5	9,021,000	7,198,000	124,085,000
9th   "       .....	6	8,731,000	8,172,000	111,615,000
6th November	7	9,048,000	6,327,000	107,273,000
27th   "       .....	6	13,063,000	8,290,000	86,413,000
11th December....	5	13,833,000	7,623,000	91,643,000

We see from these figures how great at any moment may be the demands on the reserve of the Bank of England.

### VII.—Conclusion.

There are several other points shown by these returns which it would be interesting to investigate, if space permitted. For instance, it will be found that the amount of the bankers' balances on the second return in each half year, I mean the second return in the months of January and July, is considerably above the total average of each year, and there is a very marked augmentation in these amounts during the later, compared with the earlier years included in the return. I can only suppose that this periodic fluctuation has some connection with the payments of the dividends on consols, especially as a similar though smaller fluctuation is observable at the corresponding dates in April and October. This increase, supposing the cause assigned to it to be the correct one, is probably due to larger amounts of stock held as reserve by the banks of the country generally, and also to larger amounts of dividends received on account of customers. We must not forget that the years from 1844 to 1872 have witnessed a very large increase indeed in the business of banking in the United Kingdom. Many persons have accounts with a bank now, who, or their predecessors in similar positions in life, would not have had banking accounts at the earlier date. The increase on the dates which I have mentioned probably marks this alteration in the habits of the country, and is remarkable on that account.

I have mentioned this point, among others, which a careful investigation of the returns will enable the reader to trace. I am well aware that many matters connected with the conduct of business, many incidents in the transactions of the day which have

influenced the adoption of a particular rate on a given occasion, cannot be recorded in a return, and that we have in such a shape but the dry bones, so to speak, of events, all-important at the time to the well-being of the country. But I trust that this analysis, which I have endeavoured to draw up in as complete a manner as possible, will be of service in assisting us to thread the history of the past, and may also be of some use in enabling us to see what is needed at the present time.

The subject which I proposed to investigate, in preparing this statement, was the relation of the banking reserve to the current rate of interest charged. And I think that a study of this analysis brings us to the conclusion that the rates of discount charged by the Bank of England, are regulated more by the proportion of the reserve to liabilities than by any other consideration. That the amount of the bankers' balances, and the proportion they bear to the reserve, may have a bearing on the rates charged, is very probable, though their influence is not very clearly marked in the tables. Nor is the immediate influence of the state of the foreign exchanges, quoted for the great European centres of business—Paris, Hamburg, and Amsterdam—very obvious. The foreign exchanges appear to follow, rather than to lead, the Bank of England rate of discount. I can trace no correspondence between the amount of notes issued, and very little, if any, between the amounts of bullion held, and the rate of interest charged. Nor does any other branch of business conducted by the Bank appear to affect it in any way. The proportion of the reserve to the liabilities is the cardinal point on which the rate of interest charged by the Bank turns.

We may observe in this fact a remarkable and exact instance of the operation of one of the principal laws of economic science—the law of demand and supply. The rate of interest generally, as Mr. Ricardo has stated in his "Principles of Political Economy," "is regulated by the rate of profits which can be made by the employment of capital."\*

Mr. Ricardo adds, what is equally obvious: "The rate of interest, "though ultimately and permanently governed by the rate of profit, "is, however, subject to temporary variations from other causes."† A diminished or increased demand is chief among these, and the extent of these temporary variations is best exhibited in the position of the Bank of England reserve, from the fact that the Bank of England also holds the reserve of the other banks in the country. Within the period over which the investigation extends, the amount of money in the country generally has enormously increased. The gold in circulation is nearly three times the amount it was some

\* P. 220, edition 1852.

† P. 179.

thirty years ago. Yet, while the amount of deposits held by the banks of the country—that is to say, of loanable capital—has also been greatly increased, we have more frequent and rapid variations in the bank rate of interest, and, on the average, a higher rate.

The explanation of this is, that the total amount held in reserve has not increased in a like proportion with the demands which may be made on the reserve, while, from the altered character of that reserve, there is a greater liability to sudden demands, owing to the vast increase in banking deposits in the United Kingdom during the last twenty years, an increase which I endeavoured to estimate in my Paper on Banking, read before the Statistical Society in the March of this year.

Mr. Newmarch estimated these deposits in 1851 at..... 260 millions.

To which may be added for foreign and colonial banks .....	25	,,
--	----	----

285	,,
-----	----

<u>  </u>	<u>  </u>
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I estimate the corresponding amount in 1872 at..... 616 millions.

Add for foreign and colonial banks having offices in London....	152	,,
---	-----	----

768	,,
-----	----

<u>  </u>	<u>  </u>
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This very great increase in the amounts held on deposit during the last twenty years, may at any moment give occasion for a very considerable demand on the banking reserve.

It is not, in any time of pressure, the amount of capital in the country which is taken into account, or which governs the immediate price of money. It is not the amount in circulation. It is the actual amount in hand at the time which decides the stability of the money market. Many exceptional causes, it will be said, have led to the recent great fluctuations in the money market, to the vast number of changes in the rate of interest, more this year than ever known before. But with the immensely extended commerce now carried on by this country, such causes, or similar causes, will be certain continually to manifest themselves, and the only safe course is to be prepared to meet them. In banking, the only secure position is that of strength, and that strength consists in the maintenance of an adequate reserve.

## HIGH PRICE OF COAL. SUGGESTIONS FOR NEUTRALISING ITS EVILS.

By SIR ROWLAND HILL, K.C.B., D.C.L., F.R.S., &amp;c., &amp;c.

[Read before the Statistical Society, December, 1873.]

1. THAT the preservation of our unworked stock of coal is a matter of national importance is now generally admitted; and indeed how should it be otherwise, seeing that not only our actual consumption is almost inconceivably great, but that the rate of its increase is to a startling degree rapid, the annual amount consumed having increased more than tenfold since the beginning of the present century.\* In short, it is manifest that if such rate of increase continue, a few centuries—perhaps a very few—will exhaust the available stock.†

2. It cannot but be regarded as matter of deep regret that this prodigious draught upon our future resources is augmented by great waste of the precious commodity, especially in the coal and iron districts, where of course it is comparatively cheap; and the question has naturally arisen whether, and by what means, such waste can be prevented.‡

3. In the opinion of the Duke of Argyll's Commission on this subject, an opinion based upon an investigation so admirably conducted, that it may be well taken as a model in all future research of whatever kind, "the great incentive to economy, in all cases, is "the increased cost of the article consumed;"§ and assuming the justice of this conclusion, such check must now be in strong operation.

4. Unfortunately, however, as too well shown by late experience,

\* Report of the Duke of Argyll's Commission on Coal (1871), vol. i, p. XIII, and Report of Parliamentary Committee (1873), p. III.

† A striking anomaly, though but indirectly related to the question in hand, may be touched on in a note. The quantity of coal available for use is, I scarcely need remark, limited not only by the boundaries of our coalfields, but also by the impracticability of working below a certain depth. But what constitutes this impracticability? What bars our further quest for the means of heat? Why heat itself. Heat is what we seek, and heat stops the search. Will it ever be found economically practicable to impress this worse than superfluous heat into our service? Can the foe be converted into a friend? (*Vide* "Report of the Commission on Coal," vol. i, p. VII.)

‡ Dr. Siemens, in his able address at the recent meeting of the British Association, estimates the loss by waste on the coal consumed in this country at nearly one-half.

§ "Report," vol. i, p. 97.

this check is reached at the price of such privation as, unless counterbalanced by alleviation in some other form, must involve grievous suffering. The severity of the pressure becomes strikingly evident when we compare the total recent increase in the cost of coal with the total imperial taxation of the country. This latter has been recently estimated by Mr. Lowe at 60,150,000*l.*\* Now taking consumption in 1872, according to the estimate of Mr. Ayrton's Committee, at 120,000,000 of tons,† and assuming the average increase of price to be about 10*s.* per ton,‡ or in the gross 60,000,000*l.*, it appears that the increased pressure caused by such augmentation is about equal to that which would be produced by doubling our taxation.

5. It seems improbable, however, though there is as yet no indication of decline, that so great and sudden an advancement in price will be permanently sustained; the more so because, as is well known, the output is now artificially restricted.§ Nevertheless, the expected fall, whenever it occurs, will probably be considerably short of the sudden rise, since it appears that the price previously ruling was not remunerative.|| Neither is it in all senses desirable that old prices should be resumed, seeing that they were not sufficiently high to place on waste that check which has already been spoken of as so important.

6. Hence the question arises whether in any way the benefit of high price can be retained, and at the same time the consequent suffering be prevented. Paradoxical as such hope may be, consideration seems to show that it is well founded. Supposing the fall in price to be arrested at some suitable point by the imposition of a tax, and that the weight of this tax be counterbalanced by equal remission elsewhere, it is clear that while on the one hand the check would be maintained, on the other the public, taken as a whole, would sustain no loss.

7. Now let us see how far such tax would warrant such remission. Much has been said by Mr. Bright and others about a free breakfast table. The loss to revenue consequent on such a boon, would be more than made good by a coal duty of 1*s.* per ton; and a similar amount would suffice for the total abolition of the income

\* *Vide* his speech at Sheffield.

† "Report," p. IV.

‡ Dr. Siemens, in the address already referred to, estimates the increase at 8*s.*, but Mr. Ayrton's Committee states the increase in London to be as much as 14*s.* ("Report," p. 9), and information which has reached me as to recent large contracts compared with those a few years back, leads to the conclusion that 10*s.* is by no means an excessive estimate.

§ For an able exposition of the political economy of the subject, see the "Economist," 15th February, 1873.

|| "Report of Mr. Ayrton's Committee," p. xi.

tax.\* Thus, whatever question might remain as to equability of relief by such commutation of taxes, it is clear that to the public at large there would be a balance of benefit, and something more.

8. Supposing, however, commutation to be adopted thus far, should it rest here? It has been shown by implication that a coal tax of 10s. per ton might supersede all other imperial taxation whatever; but, without aiming so far, would it be amiss to deal with some further part? Might it not be found desirable thus to supersede all but such taxes as are regarded, at least by many, as intrinsically unobjectionable; in short, all except those on tobacco, spirits, wine, and malt liquor? This remission would require an additional impost of 2s. 4d. per ton.†

9. If there be any who going so far would demand yet more, claiming some relief on at least the last two of the abovenamed articles, this might be found to the extent of one-half of the present duties, in a further impost of 9d. per ton.†

10. It appears, therefore, that a coal tax of 5s. 1d. per ton

	£
* Estimated produce of the duty on tea for the current year....	3,192,000
"	coffee and chicory for } the current year ..... }
"	sugar for the current year 1,822,000
Total .....	<hr/> 5,294,000
Estimated produce of the income tax for the current year ....	<hr/> 5,575,000
A tax of 1s. per ton on 120 million tons of coal would give .....	<hr/> 6,000,000

	£
† Total imperial taxation as stated by Mr. Lowe (par. 4) .....	60,150,000
Deduct produce of 2s. per ton on coal (par. 7) .....	12,000,000
	<hr/> 48,150,000

Tobacco last year (with licences to manufacturers and dealers) produced.....	} £7,098,500
Spirits (with proportionate amount of licences) produced .....	} 18,143,500
Wine (with proportionate amount of licences) produced .....	} 1,811,500
Malt liquor (with proportionate amount of licences) produced .....	} 7,137,500
	<hr/> 34,191,000
Remainder .....	<hr/> 13,959,000

A tax of 2s. 4d. per ton on 120 million tons of coal would give 

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14,000,000

Wine (as above) .....

£1,811,500

Malt liquor (as above) .....

7,137,500

Total .....

8,949,000 ÷ 2 = 4,474,500

A tax of 9d. per ton on coal would give .....

4,500,000

would justify the remission of all taxes save those on tobacco, spirits, wine, and malt liquor; and further, as respects the last two, would warrant an abatement of the present duty by one-half.

11. Lastly, supposing (a somewhat extravagant supposition) that notwithstanding all these props the price of coal so persistently fell as to over-weakens the required check; even for this a remedy might be found in a yet further amount of impost to be applied towards the liquidation of the national debt; which by an additional increase of 1*s.* per ton, might, as it has been seen, be thus reduced to the extent of 6,000,000*l.* per annum.\* This, with the interest released from time to time, would also (as excess of revenue above expenditure) be applied, under the existing rule, to the reduction of the debt; and the joint operation—even if there were no increase in the produce of the coal duty and other taxes—would completely extinguish the debt in about fifty years.†

12. Thus it appears, finally, that a coal duty of 6*s.* 1*d.* per ton (an amount considerably less than the late increase in price, even according to the lowest estimate), would enable the legislature not only to repeal all taxes, with the very warrantable exceptions mentioned above, but also in the course of fifty years to extinguish the national debt.

13. To what extent the price of coal would be affected by a tax on the article within the suggested limits, is a question which (however curious and interesting in itself) need not be considered in reference to effect on consumers as a class, so long as such enhancement (whatever its amount) is balanced by reduction elsewhere; but how will it bear on the interests of producers, coal-owners inclusive? Would a tax on coal necessarily lessen the profit per ton any more than a tax on tea necessarily lessens the profit per pound or per hundredweight? It would seem that the only certain effect of enhanced price would be a more restricted consumption, lessening, doubtless, immediate gain, but reserving to the coalowner (who is in some sort a monopolist) a larger stock for future sale—the very end desired. It may be remarked, by the way, that the increased reservation of our subterranean hoard here contemplated as obtainable by fiscal means, nowise differs, so far as coal producers are concerned, from that which would result from the successful use of any of the substitutes lately spoken of, as for

\* The question of a coal tax for the last purpose, I treated in a paper laid before Government about seven years ago, when Mr. Jevons called attention to the subject. In this paper I showed that, assuming that consumption would increase at the rate of 2 per cent. per annum (an assumption more than justified thus far), a tax of 3*d.* per ton applied to the paying off of the national debt would suffice, if supplemented with the interest released as payment advanced, for its total discharge in about eighty-two years.

† Interest is reckoned at 3*½* per cent. per annum,

instance, power derived from the rise and fall of the tides, the force of the wind, or the direct action of the solar heat, or even (what is doubtless more immediately practicable) the introduction into our houses of better constructed grates,\* and the adoption of such improvements in the steam engine, or in smelting, puddling, and the like, as have been shown by recent experience to make the smaller quantity of fuel do the work of the larger.† Lastly, should the coal producer suffer through restriction of demand proceeding from the change under consideration, how far would he be indemnified, on the other hand, by his share in the general relief consequent on the proposed remission elsewhere?

14. As regards the consumer, a further possibility of compensating benefit may be touched on. When the motive supplied by high price has once carried us over the obstacles now regarding the adoption of improved methods in the use of coal, the result *may* be that the consequent saving in quantity will counterbalance, or even more than counterbalance, the increase in price.‡ Supposing this happy possibility to become a fact, the contemplated reduction in taxation would obviously be, at least to almost its full extent, a pure gain.§

15. Of course I am here contemplating the tax-paying public, that is, the entire public in the gross: certain possible exceptions, however, must not be overlooked. The three most obvious are, railway companies, gas companies, and steampacket companies, in whose processes the consumption of coal bears a very large proportion to other expenses, so that the remission of taxation here contemplated, however great, might not suffice to compensate them, as *corporations*, for a great enhancement in the price of coal; but of course their gain as individuals must also be taken into account.

The railway companies—even in their corporate capacity—would,

\* Dr. Arnott's stove, one of the many excellent devices for which the public is indebted to its benevolent inventor, an apparatus admirably suited to halls and corridors, has now been in use for nearly half a century. My own experience of its benefit extends over more than forty years. Sylvester's hot air apparatus, with Captain Galton's improved grate, as also the hot-water apparatus now used in various buildings, may likewise be mentioned.

† On this part of the subject, see the admirable address of Mr. Bramwell, C.E., as President of the Mechanical Section of the British Association in 1872. Also the more recent address of Dr. Siemens, already referred to.

‡ Thus if an individual consumer whose coal when untaxed would cost him 35s. per ton, and consequently when taxed to the proposed amount would cost him (say) 40s., should be stimulated to such improved management as would reduce his consumption by one-eighth (a very moderate assumption where waste is by high authorities rated at nearly one-half), his payment for coal would sustain no increase; while, if his economy went further, it would positively be diminished.

§ The qualifications here intended to provide for the possibility of economy being carried so far as not merely to prevent increase, but to produce decrease in the general rate of consumption, which would of course tend to reduce the produce of the coal tax.

if the scheme extended so far, obtain a special compensation in the remission of the passenger duty; while the gas companies appear hitherto to have been repaid, or nearly so, by the increased value of the residual products; and perhaps all three *might*, to a certain extent, recoup themselves by increased charges to the public; though probably for this, certain companies would require legislative release, in greater or less degree, from present restrictions.

16. In fine, supposing these sanguine, but I hope not unreasonable expectations, can be fulfilled, the great object of deferred exhaustion may be so secured, that the public at large, instead of sustaining any loss in the process, would derive positive gain.

17. The following is a summary of the conclusions arrived at:—

1st. It is universally admitted that the preservation—as far as practicable—of our coalfields is a matter of vital importance.

2nd. It is established, on unquestionable authority, that there has hitherto been enormous waste in the consumption of coal; and,

3rd. That the most efficient means of checking such waste is a high price on the article.

4th. Of course, however, as shown by recent experience, a high price—unmitigated by other measures—is itself a cause of much suffering.

5th. It is thought practicable, however, so to modify other fiscal arrangements, that the present high price may be continued, and even increased, not only without injury, but with positive benefit to the community.

18. The contents of the foregoing paper, save only so far as relates to statement of facts, are intended as but a series of suggestions for the consideration of others. Feeling that I can no longer go into so difficult an inquiry with that thoroughness which alone can justify positive conclusions, I have sought to avoid expression of opinion as to the practicability or expediency of the course indicated; but having conceived of such course as affording promise of great advantage, I have deemed it my duty to put forth my thoughts, in the hope that they may, in some degree, aid in the solution of a question at once very difficult and very important. To this utterance, however, I must absolutely limit my own proceeding, having no longer the strength for controversy or even for correspondence.

19. Should others think of following up my suggestions with action, or even elaboration, I apprehend they would find it incumbent on them to inquire further than I have been able to do, how far they are consistent with justice to coalowners, and, if not, what will be the best mode of compensation.

HAMPSTEAD,

30th September, 1873.

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DISCUSSION *on* SIR ROWLAND HILL'S PAPER.

MR. MARTIN asked what had been taken as the unit of taxation in the estimates given in the paper, for it was a well known fact that the product of taxation did not increase in an arithmetical progression. If a 1*s.* tax was calculated to produce 6,000,000*l.*, it would be altogether wrong to expect that a 2*s.* tax would produce 12,000,000*l.*; on the contrary, if a 1*s.* produced 6,000,000*l.*, 6*d.* would probably produce *more* than 3,000,000*l.*

Mr. FELLOWS said Sir Rowland Hill had assumed that the quantity of coal produced continued at 120,000,000 tons per annum, and that the tax, whatever it might be, was levied on that. On that hypothesis he was justified in calculating that if a 1*s.* tax produced 6,000,000*l.*, a 2*s.* tax would yield 12,000,000*l.*

Mr. W. J. GRAZEBROOKE said he regarded the present high price of coal as a serious national calamity. A tax upon coal would be a tax on the very life and soul of our national industry. If it had not been for the almost unexampled prosperity of trade during the past two years, the high price of coal would have caused unspeakable loss. That prosperity arose from the fact that during the Franco-Prussian war an immense number of men were prevented from working at their ordinary daily avocations. This caused such a gap in the manufactures of the world, that great activity had ever since prevailed. The great reason of England's pre-eminence as a manufacturing country had hitherto been the cheapness of coal here. Would it then be wise to throw away the advantage at present possessed, in order to take off taxes on other articles? Already English manufacturers found it difficult to maintain their supremacy in foreign markets, and to place a tax on coal would turn the scale to the advantage of foreign manufacturers. It had been the custom in England to endeavour to distribute taxation evenly amongst the people; but the paper proposed to levy taxes only on one body of men—coalowners. If such a proposal were carried out, the coal proprietors would have a right to demand compensation for the depreciation of their industry. There was plenty of coal in England to last for a very long time indeed. On the other hand, he knew of 150,000 acres of admirable bituminous coal in America, which could be sold at 1*s.* 6*d.* or 1*s.* 9*d.* per ton, and that country was already looking forward to the time when she would deprive England of her iron industry. Our object should therefore be to have cheap coal, to reduce the price as much as possible, not to increase it by taxation. Every means was now being taken to carry out that object. Fresh shafts were being sunk every day, so as to secure an increased production, which was equivalent to a diminution in the price. Instead of endeavouring to maintain present rates, Englishmen should devote all their attention to the means

which were likely to reduce the price, otherwise our manufacturing supremacy was likely to be taken from us.

Mr. POCHIN did not think that the suggestions contained in the paper were likely to produce the good which the author supposed they would. The present consumption of coal was spoken of as being to a great extent waste, but unless it could be shown that large quantities were being consumed where small quantities would produce the required result, it could not be fairly said that there was a waste. Iron manufacturers would be exceedingly glad if any one would show them a means of economising coal. Mr. Isaac Lothian Bell was, however, of opinion that, so far as the smelting of iron was concerned, it was idle to suppose that any great economy could be effected in the consumption of coal. A great deal of money had also been spent in attempts to economise coal in puddling, but as yet no method of doing so had been discovered. Much had also been written of late about the necessity of economy in the use of coal in private houses, but it should be remembered that the consumption there was for purposes of ventilation as well as heat. He did not think any very great reduction could be effected in the quantity used in private houses, without producing great personal inconvenience and discomfort. Until somebody could show how economy could be carried out, it was a fallacy to speak of the present consumption as a waste. If this notion of waste were removed, the arguments in the paper would have very little indeed to rest upon.

The proposed tax was one on a raw material, and such taxes had been condemned by all political economists. It was also a tax on a first necessity, and if the consumption of coal was limited, the industry of the country must be limited also. Directly England lost her manufacturing supremacy, her operatives would leave her. Sir Rowland Hill said it was very desirable to prolong the life of our coalfields, but that must not be done at the expense of limiting the industries of the country. The paper spoke of a tax of 6s. or 7s. a-ton on coal. Until two years ago that was actually more than the price of coal at the pit's mouth. He himself was now executing a contract for 6,000 tons per week of small coal, carried a considerable distance by railway, at 2s. 6d. a-ton; and it was not customary to get even 1s. a-ton for small coal at the pit's mouth. A short time ago such coal was actually left under the ground as not being worth pulling up. He was satisfied that the present high prices could not last. They were, to a very large extent, due to the fact that the workmen had found that if they limited the production, they could get higher wages by working shorter hours. Probably two hours a-day had been taken off from the time that the coal getters were at work, yet they could get double the amount of wages that they received before, and therefore they would not permit stores to be accumulated in the summer as a provision against the winter.

Sir JAMES ANDERSON said, if the price of coal were fixed at 30s., 35s., or 40s., there would be no difficulty in supplying the railways,

gasworks, and ironworks of England with all the coal they require, from the United States and Nova Scotia. So long as England possessed the brain to use the coal advantageously in her manufactures, she would be able to obtain it at a price which would enable her to compete with other nations. He did not believe that our operatives would leave the country, no matter what became of our home supply of coal. If a tax were put on the coal, however, the result would simply be to diminish the consumption of coal produced in this country, unless other nations did the same. Besides the coalfields in America, there were immense coal districts in Southern Africa, in Australia, and in India, which could soon produce the 13,000,000 tons which are annually exported from this country. The supply obtainable from those places would be so great, if a tax were levied on coal raised at home, as to defy all attempts at limiting the consumption.

Mr. DUDLEY BAXTER was also opposed to a tax upon coal, since it would engender great discontent among the poor, as 1s. or 1s. 6d. additional would be charged to them for every 1s. levied by law. Such a tax would cause a general rise of prices, and English manufacturers would find themselves undersold in foreign markets. A coal famine was very like a corn famine. It came in periodic waves, and would be quietly endured as arising from natural causes, but a famine produced by legislative enactments was a different thing altogether, and it would be an impossibility to maintain such laws. A tax on coal would disturb our manufactures, and bear very hardly upon the capital and industry of a large portion of the community. He did not agree with Sir James Anderson, that whatever might be the price of coal here the manufacturing supremacy of this country would not be affected. Manufactures followed the coal, as had been shown even in England. Professor Jevons had stated that if the present rate of increase of coal continued till 1950, the annual consumption would be 2,600,000,000 tons, but he (Mr. D. Baxter) did not think that the present rate of increase would continue very long. The problem for this country to consider was not so much whether or not a tax should be put upon coal, as how England should retain the supremacy of her manufactures. Much saving might be effected by economy in using coal both in manufacturing and domestic consumption. He himself had reduced the consumption in his own house by one-third, by using an improved form of grate, and the same might no doubt be done generally. He did not think so badly of the progress of science as to fancy that other forces of nature besides steam would not be brought into practical use, which would diminish the demand for coal. Such forces are known even now, and only require their mechanism and use to be brought into a practical shape.

Mr. ROBERT HUNT said, it was never stated by the Coal Commission that the coal supply of England was nearly exhausted, and any inference drawn from such an assumption must be an incorrect one. In the report of that commission, a computation by an actuary was inserted, from which it appeared that if the population increased

at such and such rates, the coalfields would last so long, so that if the population increased to such an extent that a man could scarcely find standing room, then the coal supply would be reduced to something like a hundred years. Such a state of things could not, however, by any possibility come to pass. It was certain that our known coal areas would yield all that was required for several hundreds of years to come. Beyond these there is an untouched mass of coal extending from near Morpeth on the north, to the Tees on the south, and three miles out into the German Ocean. It was now contemplated to commence opening up that supply. The South Staffordshire, the Shropshire, and a portion of the West Riding of Yorkshire coalfields might not last more than fifty or one hundred years, so as to be usefully productive, but the result would only be the removal of the iron industry to other parts of the kingdom. Probably a great coal area existed around the Nottinghamshire coalfield untouched: the same is suspected of the district between the South Staffordshire and the Shropshire fields. In Gloucestershire, and extending to South Wales, there was an enormous area into which the pick of the coalheaver had never been driven. Again, it had been stated that it was not at all likely that coal could be worked beyond 4,000 feet in depth, without such difficulty as would enormously increase the cost; but in the neighbourhood of Charleroi, in Belgium, coal is worked without any difficulty at nearly 4,000 feet. It had again and again been urged that the depth at which mines could be worked would be limited by the heat, which increased according to the depth. It had somehow or other become customary to estimate that rate of increase as being  $1^{\circ}$  in every 50 feet continuously to all depths; but he had, he believed, measured the temperature at greater depths than almost any other man, and the result of his measurements by no means confirmed that theory, but rather tended to show that the increase of temperature was in a diminishing ratio; that from a depth below the surface, where it was constant, to 100 fathoms, the increase was  $1^{\circ}$  in 50 feet; that in the next 100 fathoms it was  $1^{\circ}$  in 70 feet; and that in the third hundred it was  $1^{\circ}$  in 85 feet. Similar results had also been arrived at by Mr. Robert Were Fox. Of course these results were completely opposed to the opinion that the earth was formerly a molten mass thrown off into space, the outside of which had been gradually cooling ever since; but if the figures he had given were correct, the temperatures at enormous depths would be by no means so high as was commonly computed. It was known that in South Wales seams of coal existed a depth of nearly twice 4,000 feet, and even supposing the heat to be as great as some people imagined, he believed that very heat would be found to be an engineering agent which would assist in the processes of ventilation so as to produce a temperature sufficiently low to enable men to work there with no great difficulty. It was quite certain that there was no necessity for any additional inducement to a manufacturer to economise his coal, a slight increase in force was sufficient for that. It had been assumed by Mr. Mundella's Committee on Coal that a large increase in the consumption of coal, by the manufacturers of iron, was one of the causes of the present high prices,

but he was in a position to show most conclusively the fallacy of that view. In 1871 there were produced in this kingdom 6,627,179 tons of pig iron. Three tons of coal were computed as being required for the production of one ton of pig iron, and consequently 19,881,537 tons were stated to have been used in 1871. The following estimate was based on returns furnished by nearly all the ironmasters in the kingdom. The returns for 1872 were now completed—only six small works in South Staffordshire having neglected to furnish returns, and an estimate had been made for them by some of the ironmasters of the district. The total production of pig iron in 1872 amounted to 6,741,299 tons, so that the increase over 1871 was exceedingly small. There was, however, a decrease in the quantity of coal used, for whereas in 1871 there were three tons of coal required for the production of one ton of pig iron, in 1872 only 51 cwt. of coal per ton of pig iron were used, so that the total quantity consumed was reduced to 17,190,312 tons. Some economy must therefore have been effected in the use of coal in blast furnaces. The returns as to merchant iron were not complete, but he had every reason to believe that in that branch of industry some economy, but not to the same extent, had resulted from the improvements introduced into the manufacture of iron. He was, however, quite certain that no mechanical methods could effect so great an economy in the use of coal as carefulness on the part of the stoker. This was proved by the results of the system of emulation introduced amongst the steam engineers of the Cornish mines by the late Mr. John Taylor. Where a certain premium had been offered to the stoker upon the quantity of coal he saved, the result had always been satisfactory. In 1872, according to the inspector's returns, the output of coal was 123,497,316 tons; in 1871 it was 117,352,028 tons, showing an actual excess in 1872 over 1871 of 6,145,288 tons. He believed, however, that this statement was higher than the real quantities, but the recent Coal Mines Regulation Act had taken away from him the power of verification by personal inquiries which he formerly possessed. He knew from experience that some men were disposed to misrepresent the quantity of coal produced by their collieries. He had now established another check, though he was not quite sure that it would be a satisfactory one. He had asked the assistance of all the railway and canal companies, and from the Custom House he could obtain the quantities of coal which passed either from port to port in the British Islands or to Foreign ports. All the large coal-carrying lines had furnished him with returns of the quantities of coal carried in 1871 and 1872, but he could not get the quantities carried from the collieries directly to the works by private lines, by trams, or carts. The returns from the railways, however, showed that there was in 1872 an actual increase in the distribution of coal over 1871 of upwards of 5,000,000 tons. It was therefore probable that the increase of 6,145,000 tons, as shown by the inspector's returns, was not far from the truth. It would be a most lamentable thing to check for a single moment, by anything like taxation, the produce of the great coalfields. He was perfectly satisfied that the present high price was merely a temporary state of affairs, although pro-

bably the low prices of a few years back would not be again reached. Mr. I. Lothian Bell had shown that a cost of something like 1s. 6d. per ton upon every ton raised, must be the consequence of the increased wages and other costs of working up to the present time. The cost due to the increased depth and extension of the workings, must always continue to increase; but the accidental circumstances which gave rise to the present unnatural high price, must in a short time give way to a better system regulating the relation between the master and the man, and between the coalowner and the public.

Mr. SOPWITH considered the policy advocated in the paper a mistaken one. It was one of the first conditions of manufacturing success that the raw material should be cheap. If a tax were placed on coal, the purchaser would not only have to pay that additional sum, but a further addition to it, and as coal was used in every manufacture, an increase in the price of coal meant an increase in the price of every manufactured article.

Mr. Sopwith then drew the attention of the meeting to some diagrams of mineral statistics, prepared by Mr. Howard, of Chesterfield.

Mr. W. TAYLER was of opinion that the present high prices of coal were caused by the large increase in the consumption by ocean steamers, ironworks, and gasworks, and he had hoped to hear some suggestions from the author of the paper as to the means by which the housekeepers of the country could get fuel. Instead of this, however, the paper was merely a financial statement. He had also hoped that the learned societies who had recently entered so elaborately into scientific subjects, among others that of coal supply, would have initiated some valuable suggestions on this all important object—not only to the middle classes, but specially so to the poor, to whom fuel was an essential of life—but no practical result had come from that source, and he firmly considered that whoever could invent, or be the means of producing an efficient substitute for coal, would do the highest possible service to his country.

Professor LEONE LEVI was sorry that Sir Rowland Hill should have given the authority of his great name to a scheme so futile and erroneous as that advocated in the paper—futile inasmuch as no tax, at all practicable, would hinder the consumption of an article so necessary as coal; and economically erroneous, since such a tax would materially interfere with home production. Professor Levi regretted the paper the more, since it might encourage those disaffected with the high price of coal to resort to Government for interference, ignoring the fact that the price of coal, as well as the price of any other article, must be regulated by supply and demand.

Mr. FELLOWS said he was sorry his father-in-law (Sir Rowland Hill) was not well enough to read the paper himself and to take part in the discussion.

The scheme proposed was really one not for increasing, but rather for lightening, taxation, which might be done by taxing coal,

on which possibly the economy secured in its use might in amount be even equivalent to the tax itself, whereas similar saving and economy could not be effected to the same extent with other taxes. That is to say, a coal tax of 1*s.* per ton would enable the Chancellor of the Exchequer to take off the taxes on tea, coffee, sugar, &c., and would give us a free breakfast table—and an average family using  $5\frac{1}{6}$  tons of coal yearly, costing 30*s.* per ton, or 7*l.* 15*s.*, would merely have to lessen their consumption by one-thirtieth, or to use only 5 tons, which with the tax would cost 31*s.* per ton, or 7*l.* 15*s.*, to save in this case their tax, which after all would only be about 5*s.*, and have tea, coffee, and sugar duty free. Who is there here, or how many are there in this Kingdom who would not gladly pay 1*s.* per ton extra on coal to have a free breakfast table, or to be relieved of all income and property tax? Who is there here who would not gladly pay even 5*s.* per ton extra on coal, to be relieved of all taxes whatever, except those on spirits and tobacco and half those on wine and beer? Why a tax of 5*s.* per ton on 5 tons of coal (and many families do not use so much) would only be 25*s.*, and would be entirely saved, if instead of consuming 5 tons, they could reduce their consumption by about one-sixth, or to  $4\frac{1}{4}$  tons—which in most cases might, I believe, readily be done, Mr. Dudley Baxter having reduced his by one-third.

That high prices do produce economy, was shown by Mr. Dudley Baxter's statement of his own experience, and by Mr. Hunt's figures showing that in 1871 60 cwt. of coal were used in blast furnaces to produce one ton of iron, whereas the latest returns showed that now 51 cwt. only were required. It was only since the high price of coal, that coal-saving machines had become popular, or had been introduced to any extent.

That there had been great waste of coal in this country, was shown by the Reports of Committees and Commissions, and that waste was greater in the Iron districts than anywhere else.

Taking the greatest commercial interest in the kingdom, and very large consumers of coal (the railways), how would they be affected if even a tax of 5*s.* per ton were imposed on coal? Even to them in their corporate capacity alone, the remission of taxation in other ways, would meet this charge. In addition to which there would be the boon of a free breakfast table, remission of income and property taxes, and all other taxes whatever, except those on spirits and tobacco and half those on wine and beer, which the shareholders would gain in their individual capacity.

I find, taking haphazard the balance sheets of six of the railways for the first half of 1873, and these are rather unfavourable selections for the purpose—as their proportion of passenger traffic (on which duty is paid) is small, it being only about 30 per cent. of their gross traffic—that it would pay the railway companies to have a tax of 2*s.* per ton on coal, if the income and property tax were taken off, as the sum saved in their corporate capacity alone in income and property tax would pay the extra 2*s.* per ton on coal.

An additional tax of 2*s.* per ton on coal would be recouped to the companies by the remission of the passenger duty, and an additional tax of 1*s.* per ton would be recouped to the companies by

remission of stamp, house duty, and other taxes. Thus it is seen that a tax of 5s. per ton might be imposed on coal, and these great consumers would be recouped by the remission of income and property tax, the passenger duty and other assessed taxes, independently of the additional gain to the individual shareholders by the remission of all other taxes except those on spirits, tobacco, &c.

With regard to the observations that we should pay increased prices for various articles into which coal entered into the course of manufacture; if, as is assumed, and as shown is the case with railways, the extra expense of coal caused by the tax is recouped by remission of other taxes—cost would not be increased, and we should not pay more. If, moreover, through economy in the use of coal a smaller quantity were used than formerly (as in the case of iron manufacture), prices might even be lower than at present. Assuming even that there were no economy caused by the higher price, in consequence of the tax, the nation—as a nation—would after all only pay in the aggregate the tax of 1s. or 2s. per ton, or whatever the tax might be, on the 120,000,000 of tons raised; for if any trade or trader charged more than the share of the tax due to the article, the excess cost to the buyer would be gained by the seller.

It seems to have been assumed by several speakers that there is a distinct proposal to put a tax of 6s. per ton on coal. Sir Rowland Hill's paper has merely stated the effect of various rates of taxation on coal, from 1s. to 6s., showing what taxes might be repealed by certain rates of tax on coal.

Sir Rowland Hill's proposal was not to raise the price of coal above its present rate, but to arrest its downward progress in price at some suitable point, by the imposition of a tax, the amount of which he left for statesmen to decide according to circumstances—remitting at the same time equivalent taxation in other directions.

Coal differed from corn, cotton, and many other raw materials, in this—that it was the capital of the country—and not a thing like corn or cotton that could be reproduced year after year. It was to this country what the capital of a private individual was to him, and as the latter should be very careful not to draw upon this capital, so should the country be exceedingly careful lest its capital, i.e., its stock of coal, were too freely drawn upon by the present generation.

Mr. Fellows agreed entirely with Mr. Dudley Baxter in his view that manufactures would follow the coal, and that if we had to import coal from America or elsewhere for manufacturing purposes, our manufactures would rapidly decline, and we should cease soon to be at the head of the mercantile and manufacturing nations of the world.

It therefore behoved us as a nation to look well ahead, and it appeared to him that Sir Rowland Hill had, in his paper, done this, and had put before the Society a far-seeing proposal—that did not look to the mere present benefit of this generation (though he believed it would be a present benefit), but looked also to the future of this great Empire.

It was almost demonstrated that a high price for coal was the

only way to cause economy in its use. If this high price could be met by at least equivalent reduction of taxation elsewhere, so that the evils of high price might be obviated—even to the present generation—surely the nation would be profited thereby.

Notwithstanding, therefore, the objections raised, he believed Sir Rowland's proposal was statesmanlike, though perhaps too novel to be at once adopted.

The CHAIRMAN considered that the Society owed a debt of gratitude to Sir Rowland Hill for the trouble he had taken in preparing the paper. He had presented a great financial scheme for the transference and simplification of the taxes of the country; and if foreign countries could only be prevailed upon to do the same, there might not be so great an objection to the proposed tax. But England would run a great risk if she ventured on such a step alone. The two leading facts stated by Mr. Hunt, that already (in two years) so considerable an economy had been effected in the make of iron, and that the increase of temperature in mines occurred in a diminishing ratio, were of the utmost importance, and highly encouraging.

In conclusion, Dr. Guy announced to the meeting that the Council had decided on the establishment of a Howard Medal, to be given every year to the author of the best essay upon some important subject in social statistics, giving the preference to those subjects to which Howard himself devoted his attention.

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## MISCELLANEA.

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*I.—Principal Additions to the Library of the Society during 1873.*

THE following is a list of some of the most important acquisitions to the Society's library :—

- Journal of the Asiatic Society of Bengal*, 1873. 8vo.  
 „ *Franklin Institute*, 1873. 8vo.  
 „ *Institute of Actuaries*, 1873. 8vo.  
*Minutes of Proceedings of the Institution of Civil Engineers*, 1872-73. Vols. xxxv and xxxvi. 8vo.  
*Proceedings of the Literary and Philosophical Society of Liverpool*, 1872-73. 8vo.  
*Journal of the Royal Agricultural Society*, 1873. 8vo.  
 „ *and Proceedings of the Royal Geographical Society*, 1872-73. 8vo.  
*Proceedings of the Royal Institution*, 1873.  
*Transactions of the Royal Medical and Chirurgical Society*, 1872-73. 8vo.  
*Journal of the Royal United Service Institution*, 1873. 8vo.  
*Smithsonian Contributions to Knowledge*. Vol. xviii. 4to.  
*Journal of the Society of Arts*, 1873.  
*The Athenæum*, 1873.  
 „ *Bankers' Magazine*, 1873. 8vo.  
 „ *Economist*, 1873.  
 „ *Indian Economist*, 1873.  
*Journal des Economistes*, 1873. 8vo.  
*Annals d'Hygiène publique*, 1873. 8vo.  
*The Origin of the Commerce of the British Empire*, by A. Anderson, 1786. 4to.  
*Special Report on Immigration, with accompanying Information for Immigrants*, by Dr. Edward Young, United States. 8vo.  
*Medical and Surgical History of the War of the Rebellion in the United States*. 2 vols. 4to.  
*A Practical Treatise on Life and Fire Assurance, Annuities and Reversionary Sums, and Leases for Terms and for Lives*, by J. H. James. 8vo.  
*Papers on Various Subjects*, by George Warde Norman, Esq. 8vo.  
*Reports of the United States Commissioner of Patents for 1869*, 3 vols. For 1870, 2 vols. For 1871, 2 vols. 8vo.  
*First Annual Report of the Registrar-General in Mauritius*.  
*Trade of the United Kingdom with Foreign Countries for 1871*. 4to.

*Der Boden und die landwirthschaftlichen verhaeltnisse des Preussischen Staates* (vier Baende nebst Atlas).

*The Report and Proceedings of the French Commission of Inquiry into the Monetary Question.* 2 vols. 4to.

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## II.—*The Land Tax.*

FROM the *Pall Mall Gazette*:—

“ In our system of imperial finance the British land tax reveals itself as a grotesque anomaly. It is based upon an assessment made in 1692 and modified in 1697. It is, therefore, raised upon a valuation which was probably reasonable two centuries ago, but which it can be easily shown is absurdly inequitable at the present day. It has been partially redeemed; a proceeding which has had the practical effect of fixing the payments to the tax in respect of all other lands and tenements in England and Scotland. The present land tax payers can alone relieve themselves by the same process. They are alike cut off from all hopeful agitation for its abolition or for its equitable reassessment throughout the kingdom. There is a noticeable fact in the history of the tax which is of interest just now. We allude to the ease with which an impost originally laid upon real and upon personal property shifts from the latter and attaches itself to the former. ‘For nothing can be more certain,’ the Commissioners of Inland Revenue assert, ‘though but little known, than that the so-called land tax was, in fact, a property and income tax, and, moreover, that personal estate was quite as much the object of the charge as land, if not more so.’ The commissioners cite in proof of this the second section of the Act of 1692: ‘That every person, body politick and corporate, having any estate in ready monies or in any debts owing to them, or having any estate in goods, wares, merchandise, or other chattels, or personal estate within this realm or without, shall yield and pay unto their majesties 4*s.* in the pound, according to the true yearly value thereof.’ The third section of the Act imposes a duty of 4*s.* in the pound upon the profits of salaries of all persons, except naval and military officers, having any office or employment of profit. The rules for the assessment show that the charge upon personal estate was to receive as much attention as the charge upon land. The Act of 1692 was the first Land Tax Act, but in 1697 the duty was imposed by a new statute, ‘precisely in the form which,’ say the Inland Revenue Commissioners, ‘has been preserved to the present day; that is to say, as a fixed sum for the whole kingdom, and to be raised in quotas specified in the Act for each county, city, or borough therein named.’ It is remarkable that the last-named Act, as well as that of 1797, when the tax was made permanent, appears to mark more strongly than before the taxation of personal estate as the primary object of the law. Notwithstanding this, the sum levied on personality in Mr. Pitt’s time appears to have dwindled to a mere nothing; and in 1823 the total sum so raised throughout England and Scotland was only 5,416*l.*, out of 1,210,000*l.* The difficulty which the counties felt in taxing personal property was concurrently experienced by the parishes in assessing stock in trade to the poor rate—a difficulty which led to its ultimate exemption. For the land tax the statute requires a specified amount from each county. In raising that sum the local authorities themselves adjust the quotas which each subdivision of the county is to con-

tribute by assessing the separate parishes of the respective hundreds, &c. Hence it has been the action of the local authorities, and not that of the crown officers, which has permitted personal estate to evade the burden of the tax. These circumstances are instructive with regard to the demand so frequently made at present that ordinary income and profits of trade should be assessed to local rates and taxes. The Act of 1697 imposed a charge for land tax upon England and Wales of  $1,484,015l. 1s. 11\frac{3}{4}d.$  The fractional precision of the gross impost seems ludicrous. It is not known how the  $1s. 11\frac{3}{4}d.$  was arrived at. In 1707 Scotland came within the provisions of the Annual Land Tax Act; the whole sum brought to account in the following year was  $2,026,640l.$ —England paying  $1,978,686l.$ , and Scotland  $47,954l.$  Nominally the duty was  $4s.$  in the pound. In subsequent years the duty fluctuated between  $3s.$ ,  $2s.$ , and  $1s.$  in the pound down to 1775, the yield accurately responding to the change of rate. In 1776 the rate was put back to the normal  $4s.$ , at which it has ever since stood. In 1798 the tax, which had been yearly renewed since its original imposition, was rendered perpetual. It was upon the same occasion that Mr. Pitt passed his scheme for its redemption. The scheme turns upon the price of consols at the time the redemption is effected. In 1798 consols were quoted at  $50$ , and yielded  $6$  per cent. interest. They were worth from sixteen to seventeen years' purchase; upon those terms the tax was redeemable at twenty years' purchase. The plan failed. In 1798 and 1799 the tax was redeemed to the extent of  $435,885l.$ ; in 1800 only  $40,418l.$  was redeemed. In 1870 the whole sum that had been redeemed was little over  $800,000l.$  The commissioners ascribe the failure chiefly to the rise in the price of consols. When consols rule from  $92$  to  $93$ , it will take a small fraction over  $28l.$  to redeem  $1l.$  of land tax, instead of  $20l.$ , which was the highest price that Mr. Pitt considered he could obtain when he launched his measure. We have selected ten counties to show what is the pressure now of the land tax when computed with relation to the known annual value of lands and tenements:—

*Annual Land Tax Quotas in the Undenamed Counties, and the Assessments under Schedule A of the Property Tax in respect of Lands and Houses.*

	Assessments on Lands, Messuages, or Tenements in 1867.	Land Tax by 38 Geo. III, cap. 5.	Per Cent. of Land Tax on Assessment of Lands and Houses.
Lancashire .....	$11,687,685$	$20,989$	$0\cdot2$
Yorkshire .....	$10,824,033$	$91,494$	$0\cdot8$
Surrey .....	$5,273,912$	$66,133$	$1\cdot3$
Bedfordshire .....	$774,103$	$28,554$	$3\cdot7$
Berkshire .....	$1,180,438$	$40,844$	$3\cdot5$
Durham .....	$1,851,393$	$10,597$	$0\cdot6$
Northampton .....	$1,569,743$	$47,669$	$3\cdot0$
Salop .....	$1,566,298$	$29,057$	$1\cdot9$
Wilts .....	$1,640,394$	$51,657$	$3\cdot1$
Worcester .....	$1,686,593$	$33,582$	$2\cdot0$

“ Lancashire has a very light quota and a very heavy rental of lands, messuages, and tenements; the consequence is that it pays at the rate of  $0\cdot2$  per cent., or  $4s.$  per  $100l.$  of rental. In like manner Yorkshire pays  $16s.$  per  $100l.$ , while the con-

ditions are reversed in Bedfordshire and Berkshire: the one county is mulct in the proportion of 7*s.*, and the other 7*os.* per *100l.* The table furnishes other like anomalies. In the last report of the Inland Revenue we get another illustration of the inequalities of the land tax when levied upon the original assessment. The case is that of a parish where the old assessment comprised 2,715 charges at the rate of about 4*s.* in the pound. The new assessment contained 8,392 charges at the rate of 6*d.* in the pound. The unredeemed quota of Liverpool was 9*5l.* 9*s.* 2*d.* in 1853. It was found that an assessment of one farthing in the pound was sufficient to pay the quota for fifteen years. The sums which the tax produced during the ten years ended with 1872, are shown hereunder:—

*Land Tax Raised in Great Britain during the Ten Years ended with 1872.*

	England.	Scotland.	Total.
	£	£	£
1863.....	1,071,830	34,761	1,106,591
'64.....	1,073,171	34,583	1,107,754
'65.....	1,089,345	34,575	1,123,920
'66.....	1,075,367	34,821	1,110,188
'67.....	1,077,232	34,538	1,111,770
'68.....	1,057,531	35,184	1,092,715
'69.....	1,082,900	34,690	1,117,590
'70.....	1,593,918	34,202	1,628,120
'71.....	1,056,592	34,700	1,091,292
'72.....	1,051,350	35,218	1,086,568

“ With the exception of the year 1870, the amounts annually brought into the exchequer have varied but slightly. But in that year the tax paid by England was raised about 50 per cent., paying 511,000*l.* more than in 1869. There was no alteration in the rate of the tax, nor in the assessment on which it was laid; neither was there any material diminution from the usual amount of impost in the two following years. The difference appears as the outcome of a most remarkable feat in fiscal legerdemain by the late Chancellor of the Exchequer. It was the result, we are informed, of the operation of 32 and 33 Vict., which made the land tax to be due in one sum at the commencement of the natural year; thus, the treasury netted the produce of three or four quarters' payments in the last quarter of the financial year. Scotland, it will be seen, has escaped the device, paying no less and no more in the same or in the subsequent years than its ordinary average tax.”

III.—*The Swiss Post Office,*

FROM the *Globe*:—

“ An interesting account of the Swiss Postal Department has just been issued among the consular reports. The Swiss department differs in some points from our own post office. It enjoys certain privileges and is trammelled by certain obligations which do not exist in this country. It has a monopoly for the conveyance of all closed packets not exceeding 10 lbs. in weight; and of all travellers and their baggage when off the lines of railway. Every railway company has to carry

gratuitously letter bags containing packets not exceeding 4 lbs. weight; to transport at reduced rates all 'messageries' articles from 4 lbs. to 120 lbs.; and to give free conveyance to the travelling post offices belonging to the department, together with its officials and inspectors. On the other hand, the department pays annually to the several Cantons a royalty, which amounted in 1872—an exceptionally favourable year—to one-eighth of the whole gross receipts. The total receipts of 1872 show an increase of 33,017*l.* over 1871, and of 105,453*l.* over 1869—an increase chiefly under the heads of 'travellers' and 'correspondence.' In 1872 there was a rush of foreigners, who had been kept back by the war during the two previous years. With the exception of inflammatory substances and spirituous liquors, subject to customs dues, there is hardly anything within the limit of 120 lbs. that may not be sent by messageries. The number of separate articles sent in 1872 was 5,295,000. A remarkable feature in the organisation of the Swiss Post Office is that of the transmission of money. Any sum not exceeding 20*l.* may be sent by post office order to a first-class office within the country, and not exceeding 10*l.* to a second-class office, the commissions being 6*d.* and 4*d.* respectively. A number of these orders may be purchased at a time, ready to fill up and post without any further application. The orders are paid to the recipients at their residences, a receipt being given to the postman on the back of the order itself. In 1863 the value of post office and telegraphic orders for the interior alone was 291,484*l.*; in 1872 it had risen to close on 4,000,000*l.*—a really extraordinary sum for a population of 2,700,000 persons. It must, however, be noticed that the system of bankers' cheques is but little known in Switzerland, and these orders replace them as far as possible. The total number of postage stamps issued in 1852 was 4,099,000 at a value of 15,892*l.* The increase was very steady, until the number in 1861 was 9,399,000, at a value of 68,116*l.* In each of the years 1862 and 1863 the increase was at the rate of 50 per cent., the number for the latter year being 19,938,000, at a value of 92,344*l.* This extraordinary leap, the report states, followed immediately upon the introduction of cheap postage, which took place in July, 1862. In 1872 the numbers had risen to 32,634,000, equal to 333,092*l.* The stamped envelopes, since their introduction in 1867, have increased from four to sixteen millions. In 1870 post cards were introduced; the number issued last year was over 2,000,000. The number of letters for 1872 is given at 55,925,000; or nearly 21 per head of population. This is the number delivered to or from inhabitants of Switzerland, or going through the post to France, Germany, or Italy."

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## REGISTRATION OF THE UNITED KINGDOM.

## No. I.—ENGLAND AND WALES.

MARRIAGES—QUARTER ENDED JUNE, 1873.

BIRTHS AND DEATHS—QUARTER ENDED SEPTEMBER, 1873.

A.—*Serial Table of MARRIAGES, BIRTHS, and DEATHS, returned in the Years 1873-67, and in the QUARTERS of those Years.*

Calendar YEARS, 1873-67:—Numbers.

Years .....	'73.	'72.	'71.	'70.	'69.	'68.	'67.
Marriages No.	—	200,937	190,112	181,655	176,970	176,962	179,154
Births..... ,,	—	824,646	797,428	792,787	773,381	786,858	768,349
Deaths .... ,,	—	492,065	514,879	515,329	494,828	480,622	471,073

QUARTERS of each Calendar Year, 1873-67.

(I.) MARRIAGES:—Numbers.

Qrs. ended last day of	'73.	'72.	'71.	'70.	'69.	'68.	'67.
March..... No.	41,209	40,557	36,305	36,455	37,752	36,696	36,441
June ..... ,,	53,332	50,197	48,831	46,720	43,202	45,364	45,589
September ..,	—	49,806	46,536	43,900	43,978	43,509	44,086
December ..,	—	60,377	58,440	54,580	52,038	51,393	53,038

(II.) BIRTHS:—Numbers.

Qrs. ended last day of	'73.	'72.	'71.	'70.	'69.	'68.	'67.
March..... No.	216,367	208,737	209,523	206,366	203,775	198,584	194,763
June ..... ,,	206,618	208,711	201,165	203,615	188,618	202,839	199,660
September ..,	203,609	201,105	193,271	192,521	190,394	192,583	190,782
December ..,	—	206,093	193,469	190,285	190,594	192,852	183,144

(III.) DEATHS:—Numbers.

Qrs. ended last day of	'73.	'72.	'71.	'70.	'69.	'68.	'67.
March..... No.	132,626	134,992	138,393	143,773	133,096	119,676	134,008
June ..... ,,	118,751	120,914	120,793	121,128	118,947	110,010	112,355
September ..,	114,341	118,786	121,332	124,297	114,644	130,482	108,513
December ..,	—	117,373	134,361	126,131	128,141	120,454	116,197

*Annual Rates of MARRIAGES, BIRTHS, and DEATHS, per 1,000 PERSONS LIVING in the Years 1873-67, and the QUARTERS of those Years.*

*Calendar YEARS, 1873-67:—General Ratios.*

YEARS.....	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
Estmtd. Popln. of England in thousands in middle of each Year....	23,356,	—	23,068,	22,783,	22,501,	22,223,	21,949,	21,678,
Persons Mar- ried .....	—	16·8	17·4	16·7	16·1	15·9	16·1	16·5
Births .....	—	35·3	35·7	35·0	35·2	34·8	35·8	35·4
Deaths.....	—	22·6	21·3	22·6	22·9	22·3	21·9	21·7

*QUARTERS of each Calendar Year, 1873-67.*

(I.) PERSONS MARRIED:—Ratio per 1,000.

Qrs. ended last day of	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
March .....	14·3	13·8	14·1	12·9	13·2	13·8	13·5	13·7
June.....	18·3	17·1	17·5	17·2	16·7	15·6	16·6	16·9
September .....	—	16·4	17·1	16·2	15·5	15·7	15·8	16·2
December .....	—	19·9	20·7	20·4	19·2	18·6	18·6	19·5

(II.) BIRTHS:—Ratio per 1,000.

Qrs. ended last day of	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
March .....	37·6	37·0	36·3	37·3	37·3	37·3	36·4	36·6
June.....	35·5	36·3	36·3	35·5	36·4	34·1	37·2	37·1
September .....	34·6	34·2	34·6	33·7	34·0	34·1	34·9	35·0
December .....	—	34·2	35·4	33·7	33·6	34·1	35·0	33·6

(III.) DEATHS:—Ratio per 1,000.

Qrs. ended last day of	'73.	Mean '63-72.	'72.	'71.	'70.	'69.	'68.	'67.
March .....	23·0	25·2	23·5	24·7	26·0	24·4	21·9	25·2
June.....	20·4	21·8	21·0	21·3	21·6	21·5	20·2	20·9
September .....	19·4	21·4	20·4	21·1	22·0	20·5	23·7	19·9
December .....	—	22·2	20·2	23·4	22·3	22·9	21·8	21·3

B.—Comparative Table of CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE in each of the Nine QUARTERS ended September, 1873.

1 Quarters ending	2 Average Price of Consols (for Money).	3 Average Rate of Bank of England Dis- count.	4 Average Price of Wheat per Quarter in England and Wales.	5 Average Prices of Meat per lb. at the Metropolitan Meat Market (by the Carcase), with the Mean Prices.		7 Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	8 Pauperism.		10 Mean Tem- pera- ture.	
				6 Beef. Mutton.			In-door.	Out-door.		
1871									°	
Sept. 30	£ 93 $\frac{3}{8}$	2·2	s. d. 57 9	d. d. d. 5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	d. d. d. 5 $\frac{3}{4}$ —9 7 $\frac{3}{8}$	s. s. s. 60—77 68	132,067	769,764	61·3	
Dec. 31	93	4·2	56 3	5—7 $\frac{3}{4}$ 6 $\frac{3}{8}$	5 $\frac{1}{2}$ —8 $\frac{1}{4}$ 6 $\frac{7}{8}$	75—104 89	141,027	759,666	41·8	
1872										
Mar. 31	92 $\frac{4}{8}$	3·0	55 4	5—7 $\frac{1}{4}$ 6 $\frac{1}{8}$	5 $\frac{3}{4}$ —8 $\frac{1}{2}$ 7 $\frac{1}{8}$	80—120 100	149,599	776,793	43·6	
June 30	92 $\frac{7}{8}$	4·0	56 8	5 $\frac{1}{4}$ —7 $\frac{1}{2}$ 6 $\frac{3}{8}$	6—8 $\frac{3}{4}$ 7 $\frac{3}{8}$	124—150 137	134,412	724,463	52·8	
Sept. 30	92 $\frac{4}{8}$	3·5	58 11	5 $\frac{1}{4}$ —8 6 $\frac{5}{8}$	6 $\frac{1}{4}$ —9 $\frac{1}{4}$ 7 $\frac{3}{4}$	105—133 119	126,377	681,987	61·1	
Dec. 31	92 $\frac{2}{8}$	5·9	57 3	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	6—8 $\frac{1}{2}$ 7 $\frac{1}{4}$	153—187 170	138,648	675,598	45·3	
1873										
Mar. 31	92 $\frac{3}{8}$	3·9	55 10	5 $\frac{1}{2}$ —8 6 $\frac{3}{4}$	6 $\frac{1}{4}$ —9 7 $\frac{5}{8}$	179—235 207	150,392	703,357	39·4	
June 30	93 $\frac{3}{8}$	5·2	56 5	6—8 $\frac{3}{4}$ 7 $\frac{3}{8}$	6 $\frac{3}{4}$ —9 $\frac{1}{2}$ 8 $\frac{1}{8}$	183—242 212	135,491	666,126	50·2	
Sept. 30	92 $\frac{4}{8}$	3·8	61 4	5 $\frac{3}{4}$ —8 $\frac{3}{4}$ 7 $\frac{1}{4}$	6 $\frac{1}{2}$ —9 $\frac{1}{4}$ 7 $\frac{7}{8}$	95—120 107	127,674	632,412	60·3	

C.—General Average Death-Rate Table:—Annual Rate of Mortality to 1,000 of the Population in the Eleven Divisions of England.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in					
	Ten Years, 1861-70.	1872. Quarters ending			1873. Quarters ending	
		June.	Sept.	Dec.	March.	June.
England and Wales .....	22·4	21·0	20·4	20·2	23·0	20·4
I. London .....	24·3	20·7	21·4	19·8	22·7	20·0
II. South-Eastern counties .....	19·1	17·0	16·9	16·2	18·8	16·5
III. South Midland , .....	20·2	18·4	18·3	18·0	20·8	17·5
IV. Eastern counties .....	20·1	17·8	17·5	18·1	20·9	18·6
V. South-Western counties .....	19·9	19·1	16·1	17·8	21·2	18·2
VI. West Midland , .....	21·8	21·1	19·6	20·8	23·6	19·8
VII. North Midland , .....	20·8	21·3	21·4	19·3	22·9	20·1
VIII. North-Western , .....	26·3	23·8	24·0	23·8	26·9	24·1
IX. Yorkshire .....	24·0	23·7	23·9	22·5	23·8	22·1
X. Northern counties .....	22·7	23·3	22·9	22·3	23·8	22·9
XI. Monmouthshire and Wales	21·6	21·9	18·0	19·9	23·8	21·7
						17·4

D.—*Special Average Death-Rate Table:—ANNUAL RATE OF MORTALITY per 1,000 in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1873-71.*

	Area in Statute Acres.	Population Enumerated. 1871.	Quarters ending	Annual Rate of Mortality per 1,000 in each Quarter of the Years			
				1873.	Mean '63.72.	1872.	1871.
				March ..	24.4	27.3	25.4
In 130 Districts, and 59 Sub-districts, comprising the <i>Chief Towns</i> .....	3,183,965	12,892,982	June ....	21.6	23.4	22.6	22.9
			Sept. ....	22.0	24.1	23.0	24.0
			Dec. ....	—	24.8	22.0	26.4
			Year ....	—	24.9	23.3	25.0
			Year ....	—	19.7	18.6	19.5
In the remaining Dis- tricts and Sub-districts of England and Wales, comprising chiefly <i>Small Towns</i> and <i>Country Parishes</i> .....	34,135,256	9,819,284	March ..	21.1	22.6	20.9	22.0
			June ....	18.8	19.7	18.9	19.1
			Sept. ....	16.0	17.7	17.0	17.4
			Dec. ....	—	18.7	17.7	19.5

*Note.*—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year, 92 days. For this inequality a correction has been made in these calculations, also for the difference between 365 and 365.25 days, and 366 and 365.25 days in leap year.

E.—*Special Town Table:—POPULATION; BIRTHS, DEATHS; MEAN TEMPERATURE and RAINFALL in the Third Quarter of 1873, in TWENTY-ONE Large Towns.*

Cities, &c.	Estimated Population in the Middle of the Year 1873.	Births in 13 Weeks ending 27th Sept., 1873.	Deaths in 13 Weeks ending 27th Sept., 1873.	Annual Rate to 1,000 Living during the 13 Weeks ending 27th Sept.		Mean Temperature in 13 Weeks ending 27th Sept., 1873.	Rainfall in Inches in 13 Weeks ending 27th Sept., 1873.
				Births.	Deaths.		
Total of 21 towns in U. K.	7,507,575	67,055	44,452	35.8	23.8	58.1	9.47
London .....	3,356,073	28,720	18,234	34.3	21.8	60.6	8.41
Portsmouth .....	118,280	1,021	517	34.6	17.5	60.3	—
Norwich .....	81,677	630	413	31.0	20.3	58.5	7.89
Bristol .....	189,648	1,651	1,017	34.9	21.5	58.1	10.55
Wolverhampton .....	70,084	638	482	36.5	27.6	58.3	9.39
Birmingham .....	355,540	3,378	2,239	38.1	25.3	58.2	10.73
Leicester .....	102,694	1,165	744	45.5	29.1	—	—
Nottingham .....	89,557	806	599	36.1	26.8	57.8	7.61
Liverpool .....	505,274	4,696	3,417	37.3	27.1	57.3	9.86
Manchester .....	354,057	3,283	2,637	37.2	29.9	58.6	12.10
Salford .....	130,468	1,360	942	41.8	29.0	57.0	11.66
Oldham .....	85,141	848	454	40.0	21.4	—	13.31
Bradford .....	156,609	1,482	885	38.0	22.7	57.9	7.00
Leeds .....	272,619	2,682	1,851	39.5	27.3	58.3	6.69
Sheffield .....	254,352	2,659	1,703	42.0	26.9	57.9	6.22
Hull .....	128,125	1,206	878	37.8	27.5	57.8	8.31
Sunderland .....	102,450	1,075	563	42.1	22.1	—	—
Newcastle-on-Tyne .....	133,246	1,347	994	40.6	29.9	—	—
Edinburgh .....	208,553	1,600	1,002	30.8	19.3	57.4	—
Glasgow .....	498,462	4,627	3,242	37.3	26.1	55.8	13.77
Dublin .....	314,666	2,181	1,639	27.8	20.9	58.2	10.61

F.—*Divisional Table:—MARRIAGES Registered in Quarters ended 30th June, 1873-71; and BIRTHS and DEATHS in Quarters ended 30th September, 1873-71.*

1 DIVISIONS. (England and Wales.)	2 AREA* in Statute Acres.	3 POPULATION, 1871. (Persons.)	4 5 6 MARRIAGES in Quarters ended 30th June.			
			1873.	1872.	1871.	
			No.	No.	No.	
ENGLD. & WALES.... <i>Totals</i>	37,319,221	22,712,266	53,332	50,197	48,652	
I. London .....	75,362	3,254,260	8,770	8,312	8,042	
II. South-Eastern .....	3,994,431	2,167,726	4,015	3,854	3,848	
III. South Midland .....	3,201,325	1,442,654	2,525	2,367	2,268	
IV. Eastern .....	3,211,441	1,218,728	1,910	1,885	1,826	
V. South-Western .....	4,981,170	1,880,777	3,625	3,484	3,532	
VI. West Midland .....	3,945,460	2,720,669	6,527	6,057	6,047	
VII. North Midland .....	3,535,445	1,406,935	3,797	3,450	3,285	
VIII. North-Western .....	1,998,914	3,389,044	8,839	8,734	8,102	
IX. Yorkshire .....	3,702,384	2,395,569	6,096	5,545	5,468	
X. Northern .....	3,547,947	1,414,234	4,024	3,615	3,400	
XI. Monmthsh. & Wales	5,125,342	1,421,670	3,204	2,894	2,834	
7 DIVISIONS. (England and Wales.)	8	9	10	11	12	
	BIRTHS in Quarters ended 30th September.			DEATHS in Quarters ended 30th September.		
	1873.	1872.	1871.	1873.	1872.	1871.
ENGLD. & WALES.... <i>Totals</i>	No. 203,609	No. 201,105	No. 192,986	No. 114,343	No. 118,786	No. 121,236
I. London .....	28,720	28,399	26,628	18,234	17,660	18,637
II. South-Eastern .....	17,072	17,611	17,027	8,661	9,437	9,773
III. South Midland .....	11,885	12,154	11,578	6,156	6,752	6,812
IV. Eastern .....	9,523	9,768	9,375	5,397	5,410	6,166
V. South-Western .....	13,967	13,978	13,989	7,153	7,677	8,058
VI. West Midland .....	25,042	24,498	23,676	12,829	13,606	13,283
VII. North Midland .....	12,734	12,302	11,779	6,706	7,677	6,914
VIII. North-Western .....	32,867	32,638	31,248	20,384	20,917	21,427
IX. Yorkshire .....	23,681	22,995	21,777	13,670	14,764	13,830
X. Northern .....	15,574	14,497	13,841	8,768	8,370	9,892
XI. Monmthsh. & Wales	12,544	12,265	12,068	6,385	6,516	6,444

\* These are revised figures, and will be found to differ somewhat from those hitherto published.

## G.—General Meteorological Table, Quarter ended September, 1873.

[Abstracted from the particulars supplied to the Registrar-General by JAMES GLAISHER, Esq., F.R.S., &amp;c.]

1873.	Months.	Temperature of								Elastic Force of Vapour.	Weight of Vapour in a Cubic Foot of Air.		
		Air.		Evaporation.		Dew Point.		Air—Daily Range.					
		Mean.	Diff. from Average of 102 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.	Mean.	Diff. from Average of 32 Years.				
July ...	63°4	+1°8	+1°4	58°8	+1°3	54°9	+1°1	22°7	+1°7	66°0	In. .431 +.016 4°8 Gr. +0°2		
Aug. ...	62°7	+1°9	+1°3	58°2	+0°9	54°4	+0°7	20°3	+0°5	65°8	In. .424 +.008 4°7 +0°1		
Sept. ...	54°7	-1°8	-2°6	51°8	-2°3	49°0	-2°1	19°1	+0°6	58°8	In. .348 -.032 4°0 -0°2		
Mean ...	60°3	+0°6	0°0	56°3	0°0	52°8	+0°2	20°7	+0°9	63°5	In. .401 -.003 4°5 0°0		

1873.	Months.	Degree of Humidity.	Reading of Barometer.		Weight of a Cubic Foot of Air.	Rain.		Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass.				
		Mean.	Diff. from Average of 32 Years.	Mean.		Mean.	Diff. from Average of 32 Years.		At or below 30°.	Between 30° and 40°.	Above 40°.	Number of Nights it was	
		Mean.	Diff. from Average of 32 Years.	Mean.		Mean.	Diff. from Average of 32 Years.		Mean.	Diff. from Average of 32 Years.	Mean.	Lowest Reading at Night.	Highest Reading at Night.
July ...	74	+ 1	In. 29°793	In. -.014	Gr. 526	Gr. - 2	In. 1°9	In. -.7	Miles. 264	0	0	31	41°1 59°6
Aug. ...	75	- 1	29°765	-.029	527	- 2	3°2	+0°8	284	0	2	29	37°3 60°5
Sept. ...	81	+ 1	29°792	-.015	536	+ 1	2°5	0°0	250	1	18	11	27°9 49°8
Mean ...	77	0	29°783	-.019	530	- 1	Sum 7°6	Sum 0°0	Mean 266	Sum 1	Sum 20	Sum 71	Lowest 27°9 Highest 60°5

*Note.*—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

The mean temperature of July was 63°4, being 1°8 higher than the average of 102 years, lower than in 1872 by 1°6, but higher than in 1871 by 1°7.

The mean temperature of August was 62°7, being 1°9 higher than the average of 102 years, higher than in 1872 by 1°8, lower than in 1871 by 2°1, and higher than in 1870 and 1869.

The mean temperature of September was 54°7, being 1°8 lower than the average of 102 years, and lower than in any year back to 1863, when 53°7 was recorded.

The mean high day temperatures were higher than their respective averages in July and August, but lower in September.

The mean low night temperatures were also lower than their averages in the first two months, and higher in the last.

Therefore the days and nights of July and August were warm, and those of September cold.

The daily ranges of temperature were greater than their respective averages in July, August, and September, by 1°7, 0°5, and 0°6.

## H.—Special Meteorological Table, Quarter ended 30th September, 1873.

1 NAMES OF STATIONS.	2 Mean Pressure of Dry Air reduced to the Level of the Sea.	3 Highest Reading of the Thermo- meter.	4 Lowest Reading of the Thermo- meter.	5 Range of Tem- perature in the Quarter.	6 Mean Monthly Range of Tem- perature.	7 Mean Daily Range of Tem- perature.	8 Mean Tem- perature of the Air.	9 Mean Degree of Hu- midity.
Guernsey.....	29·586	81·0	48·5	32·5	22·5	9·5	59·5	82
Osborne .....	29·585	86·7	43·6	43·1	33·7	15·8	60·1	81
Barnstaple .....	29·514	83·5	41·0	42·5	33·3	13·7	59·5	86
Royal Observatory	29·554	88·7	38·2	50·5	48·7	20·7	60·3	77
Royston .....	29·579	93·5	34·4	59·1	42·6	22·3	59·0	79
Norwich .....	29·519	92·0	36·0	56·0	39·0	18·7	58·8	86
Llandudno .....	29·508	93·0	41·0	52·0	35·2	14·5	58·5	77
Derby .....	29·508	88·0	35·0	53·0	36·0	15·3	57·8	82
Stonyhurst .....	29·504	88·2	32·0	56·0	36·7	15·8	56·5	85
North Shields.....	29·548	75·6	37·2	38·4	29·1	12·5	55·9	76

10 NAMES OF STATIONS.	11 Mean estimated Strength.	12	13	14	15	16 Mean Amount of Cloud.	17	18	
		WIND.					RAIN.	in.	
		Relative Proportion of							
		N.	E.	S.	W.				
Guernsey.....	1·2	5	4	10	11	4·8	40	10·77	
Osborne .....	0·1	3	4	9	14	6·0	41	6·06	
Barnstaple .....	1·2	1	4	13	12	3·9	65	14·85	
Royal Observatory	0·3	3	3	9	15	6·0	33	7·55	
Royston .....	—	—	—	—	—	5·8	35	6·29	
Norwich .....	—	3	4	10	13	—	34	6·88	
Llandudno .....	0·7	5	2	6	18	6·1	49	7·37	
Derby .....	—	3	2	10	15	—	52	6·64	
Stonyhurst .....	—	3	3	9	15	7·8	81	14·01	
North Shields.....	2·7	7	2	5	16	5·5	55	7·90	

## No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER  
ENDED 30TH SEPTEMBER, 1873.

I.—*Serial Table:—Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Population estimated to the Middle of each Year, also the Number during each Quarter of the Years 1873-69 inclusive.*

	1873.		1872.		1871.		1870.		1869.	
	Number.	Per Cent.								
<b>1st Quarter—</b>										
Births .....	30,210	3·52	29,506	3·47	28,902	3·43	28,674	3·44	28,429	3·44
Deaths .....	21,443	2·50	21,245	2·50	19,756	2·34	22,184	2·66	20,431	2·47
Marriages ..	6,618	0·77	5,820	0·68	5,415	0·64	5,631	0·67	5,291	0·64
<b>Mean Temperature }</b>	38°·1		40°·7		39°·1		36°·9		40°·0	
<b>2nd Quarter—</b>										
Births .....	31,283	3·64	30,726	3·61	30,583	3·63	30,645	3·67	29,472	3·56
Deaths .....	19,931	2·32	19,045	2·24	18,715	2·22	17,984	2·15	19,449	2·35
Marriages ..	6,690	0·78	6,398	0·75	5,946	0·70	5,754	0·69	5,596	0·67
<b>Mean Temperature }</b>	49°·2		49°·2		48°·7		51°·0		48°·4	
<b>3rd Quarter—</b>										
Births .....	28,975	3·38	29,181	3·43	28,689	3·40	28,272	3·39	27,646	3·33
Deaths .....	17,072	1·99	16,692	1·96	16,835	2·00	16,555	2·03	16,532	2·00
Marriages ..	5,816	0·68	5,891	0·69	5,424	0·64	5,301	0·63	4,870	0·59
<b>Mean Temperature }</b>	55°·4		55°·8		56°·3		57°·1		56°·4	
<b>4th Quarter—</b>										
Births .....	—	—	29,460	3·46	27,953	3·32	27,832	3·26	27,848	3·37
Deaths .....	—	—	18,759	2·20	19,338	2·29	17,844	2·08	19,377	2·34
Marriages ..	—	—	7,471	0·88	7,181	0·85	7,102	0·85	6,326	0·76
<b>Mean Temperature }</b>	—		41°·8		41°·3		39°·6		40°·9	
<b>Year—</b>										
<b>Population.</b>	3,430,923		3,399,226		3,367,922		3,336,707		3,305,885	
Births .....	—	—	118,873	3·49	116,127	3·45	115,423	3·46	113,395	3·41
Deaths .....	—	—	75,741	2·22	74,644	2·22	74,067	2·22	75,789	2·29
Marriages ..	—	—	25,580	0·75	23,966	0·71	23,788	0·71	22,083	0·66

II.—*Special Average Table:—Number of Births, Deaths, and Marriages in Scotland and in the Town and Country Districts during the Quarter ending 30th September, 1873, and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

Registration Groups of Districts.	Population.		Total Births.			Illegitimate Births.		
	Census, 1871.	Estimated to Middle of 1873.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND .....	3,360,018	3,430,923	28,975	3·38	30	2,604	9·0	11·1
Principal towns ....	1,068,556	1,114,907	10,022	3·59	28	888	8·9	11·3
Large     ,,     ....	332,180	387,386	3,353	3·86	26	235	7·0	14·3
Small     ,,     ....	778,164	791,381	7,043	3·56	28	600	8·5	11·7
Mainland rural ....	1,049,114	1,046,283	7,667	2·93	34	833	10·8	9·2
Insular     ,,     ....	132,004	130,966	890	2·72	37	48	5·4	18·5

Registration Groups of Districts.	Population.		Deaths.			Marriages.		
	Census, 1871.	Estimated to Middle of 1872.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND .....	3,360,018	3,430,923	17,072	1·99	51	5,816	0·68	147
Principal towns ....	1,068,556	1,114,907	6,878	2·47	41	2,546	0·91	109
Large     ,,     ....	332,180	387,386	2,015	2·32	43	745	0·86	116
Small     ,,     ....	778,164	791,381	3,842	1·94	52	1,317	0·67	150
Mainland rural ....	1,049,114	1,046,283	3,894	1·49	67	1,138	0·43	230
Insular     ,,     ....	132,004	130,966	443	1·35	74	70	0·21	468

III.—*Bastardy Table:—Proportion of Illegitimate in every Hundred Births in the Divisions and Counties of Scotland, during the Quarter ending 30th September, 1873.*

Divisions.	Per Cent. of Illegi- timate.	Counties.	Per Cent. of Illegi- timate.	Counties.	Per Cent. of Illegi- timate.	Counties.	Per Cent. of Illegi- timate.
SCOTLAND .....	9·0						
Northern .....	8·0	Shetland ....	5·5	Forfar .....	10·7	Lanark .....	7·9
		Orkney .....	7·0	Perth .....	11·0	Linlithgow ..	6·9
North-Western	6·3	Caithness ....	11·5	Fife .....	7·4	Edinburgh ..	7·4
North-Eastern	14·3	Sutherland ....	5·6	Kinross .....	5·0	Haddington ..	10·3
East Midland ..	9·6	Ross and } Cromarty }	4·5	Clackman- } nan .....	8·9	Berwick ....	10·0
West Midland.	6·9	Inverness ....	8·1	Stirling .....	6·8	Peebles .....	6·2
South-Western	7·5	Nairn .....	3·6	Dumbarton ..	6·4	Selkirk .....	8·5
South-Eastern.	7·8	Elgin .....	15·9	Argyll .....	7·0	Roxburgh ..	15·7
		Banff .....	16·1	Bute .....	9·4	Dumfries ....	14·8
Southern .....	16·0	Aberdeen ....	14·1	Renfrew .....	6·4	Kirkcud- bright ..	19·5
		Kincardine....	12·5	Ayr .....	7·2	Wigtown ....	18·9

**IV.—Divisional Table:—MARRIAGES, BIRTHS, and DEATHS REGISTERED in the Quarter ended 30th September, 1873.**

1 DIVISIONS. (Scotland)	2 AREA in Statute Acres.	3 POPULATION, 1871. (Persons.)	4 Marriages.	5 Births.	6 Deaths.
	No.	No.	No.	No.	No.
<b>SCOTLAND .....</b>	<b>Totals</b>	<b>19,639,377</b>	<b>3,360,018</b>	<b>5,816</b>	<b>28,975</b>
I. Northern .....	2,261,622	127,191	99	753	440
II. North-Western.....	4,739,876	166,351	103	1,105	557
III. North-Eastern .....	2,429,594	393,199	488	3,171	1,458
IV. East Midland .....	2,790,492	559,676	819	4,498	2,706
V. West Midland .....	2,693,176	251,088	367	2,019	1,187
VI. South-Western.....	1,462,397	1,183,218	2,808	12,094	7,665
VII. South-Eastern .....	1,192,524	475,523	881	3,933	2,440
VIII. Southern .....	2,069,696	203,772	251	1,442	819

**No. III.—GREAT BRITAIN AND IRELAND.**

**SUMMARY of MARRIAGES, in the Quarter ended 30th June, 1873; and BIRTHS and DEATHS, in the Quarter ended 30th September, 1873.**

COUNTRIES.	[000's omitted].		Marriages.	Per 1,000 of Population.	Births.	Per 1,000 of Population.	Deaths.	Per 1,000 of Population.
	Area in Statute Acres.	Popu-lation, 1871. (Persons.)						
England and Wales .....	37,325,	22,712,	53,332	2·3	203,609	9·0	114,343	5·0
Scotland .....	19,639,	3,360,	5,816	1·7	28,975	8·6	17,072	5·1
Ireland .....	20,323,	5,412,	5,323	1·0	33,571	6·2	19,271	3·6
GREAT BRITAIN AND IRELAND }	77,287,	31,484,	64,471	2·0	266,155	8·5	150,686	4·8

*Note.*—The numbers against Ireland represent the marriages, births, and deaths that the local registrars have succeeded in recording; but how far the registration approximates to absolute completeness, does not at present appear to be known. It will be seen that the Irish ratios of births, deaths, and marriages are much under those of England and Scotland.—ED. S. J.

**Trade of United Kingdom, 1873-72-71.—Distribution of Exports\* from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.**

Merchandise (excluding Gold and Silver), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Six Months.					
	1873.		1872.		1871.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	13,142,	6,847,	13,327,	4,257,	10,737,	4,126,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	23,182,	25,974,	21,628,	26,270,	23,077,	21,889,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries) .....	30,138,	12,743,	26,742,	11,989,	18,937,	11,894,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	3,238,	5,349,	3,120,	4,511,	3,768,	4,489,
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	11,242,	7,292,	11,655,	6,715,	10,559,	6,163,
Northern Africa; viz., Tripoli, Tunis, Algeria and Morocco .....	610,	222,	526,	175,	326,	133,
Western Africa.....	866,	588,	868,	470,	930,	525,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands.....	104,	64,	103,	126,	134,	74,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands .....	1,230,	650,	1,109,	662,	1,068,	745,
South Sea Islands .....	33,	14,	80,	10,	34	10,
China, including Hong Kong .....	4,585,	3,714,	5,538,	5,717,	5,696,	6,158,
United States of America .....	40,249,	19,822,	32,102,	21,903,	36,692,	17,227,
Mexico and Central America .....	838,	635,	950,	538,	535,	617,
Foreign West Indies and Hayti.....	1,836,	2,094,	2,024,	1,577,	1,766,	1,734,
South America (Northern), New Granada, Venezuela, and Ecuador	782,	1,819,	684,	1,723,	702,	1,333,
" (Pacific), Peru, Bolivia, Chili, and Patagonia ....	4,951,	3,036,	5,354,	2,537,	4,362,	1,957,
" (Atlantic) Brazil, Uruguay, and Buenos Ayres .....	5,712,	6,501,	7,445,	5,948,	5,044,	4,386,
Whale Fisheries; Grnlnd., Davis' Straits, Southn. Whale Fishery, & Falkland Islands	34,	—	32,	6,	49,	—
Total—Foreign Countries .....	142,182,	96,864,	133,287,	95,134,	124,416,	83,460,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore .....	18,873,	12,489,	23,080,	10,396,	15,120,	9,407,
Austral. Cols.—N. So. W., Vict., and Queensld.	7,173,	5,689,	7,546,	4,387,	6,266,	3,367,
" " So. Aus., W. Aus., Tasm., and N. Zealand .....	4,143,	2,387,	3,977,	1,613,	3,146,	1,071,
British North America .....	1,557,	3,619,	898,	4,106,	1,637,	3,059,
" W. Indies with Btsh. Guiana & Honduras	3,075,	1,646,	3,266,	1,623,	3,448,	1,463,
Cape and Natal .....	1,863,	2,053,	1,824,	1,815,	1,476,	871,
Brt. W. Co. of Af., Ascension and St. Helena	162,	388,	251,	439,	445,	304,
Mauritius .....	998,	309,	1,020,	322,	391,	274,
Channel Islands .....	313,	343,	366,	360,	320,	434,
Total—British Possessions .....	38,747,	28,923,	42,228,	25,061,	32,249,	20,240,
General Total .....	£ 180,929,	125,787,	175,515,	120,095,	156,665,	103,700,

\* i.e., British and Irish produce and manufactures.

**Trade of United Kingdom, 1871-67.—Computed Real Value of the Total Exports of Foreign and Colonial Produce and Manufactures to each Foreign Country and British Possession.**

Merchandise Exported to the following Foreign Countries, &c. [1000's omitted.]	1871.	1870.	1869.	1868.	1867.
<b>I.—FOREIGN COUNTRIES.</b>					
<b>Northern Europe;</b> viz., Russia, Sweden, Norway, Denmark, & Iceland, & Heligoland	4,491,	4,597,	4,382,	4,054,	4,550,
<b>Central Europe;</b> viz., Prussia, Germany, the Hanse Towns, Holland and Belgium ..	25,683,	18,200,	20,762,	21,082,	19,410,
<b>Western Europe;</b> viz., France, Portugal, (with Azores, Madeira, &c.), and Spain, (with Gibraltar and Canaries) .....	16,956,	11,351,	12,838,	13,854,	12,048,
<b>Southern Europe;</b> viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	2,115,	1,624,	1,623,	1,329,	1,353,
<b>Levant;</b> viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	626,	573,	502,	459,	520,
<b>Northern Africa;</b> viz., Tripoli, Tunis, Algeria, and Morocco .....	46,	45,	51,	36,	48,
<b>Western Africa</b> .....	199,	247,	208,	210,	187,
<b>Eastern Africa;</b> with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorua Islands .....	2,	35,	2,	2,	2,
<b>Indian Seas,</b> Siam, Sumatra, Java, Philippines; other Islands .....	21,	19,	36,	46,	58,
South Sea Islands .....	2,	2,	1,	1,	1,
<b>China,</b> including Hong Kong .....	547,	554,	420,	335,	350,
<b>United States of America</b> .....	4,165,	2,971,	2,163,	2,370,	2,294,
Mexico and Central America .....	179,	167,	67,	57,	87,
Foreign West Indies and Hayti .....	315,	327,	131,	307,	143,
<b>South America (Northern),</b> New Granada, Venezuela and Ecuador	78,	71,	46,	100,	83,
" (Pacific), Peru, Bolivia, Chili, and Patagonia .....	356,	185,	258,	220,	120,
" (Atlantic), Brazil, Uruguay, and Buenos Ayres .....	337,	287,	103,	113,	244,
Other countries (unenumerated) .....	78,	30,	39,	24,	37,
<i>Total—Foreign Countries</i> .....	56,646,	41,283,	43,629,	44,596,	41,532,
<b>II.—BRITISH POSSESSIONS :</b>					
British India, Ceylon, and Singapore .....	1,142,	909,	1,073,	1,141,	1,134,
Austral. Cols.—New South Wales and Victoria, So. Aus., W. Aus., Tasm., and N. Zealand .....	1,062,	837,	970,	987,	744,
British North America .....	855,	800,	751,	723,	867,
" W. Indies with Btsh. Guiana & Honduras	382,	293,	321,	324,	243,
Cape and Natal .....	117,	104,	70,	69,	74,
Brt. W. Co. of Af., Ascension and St. Helena...	94,	72,	80,	84,	94,
Mauritius .....	32,	17,	18,	21,	7,
Channel Islands .....	173,	158,	138,	141,	135,
Other possessions .....	6,	21,	11,	15,	11,
<i>Total—British Possessions</i> .....	3,863,	3,211,	3,432,	3,505,	3,309,
<i>General Total</i> £ 60,509,	44,494,	47,061,	48,101,	44,841,	

**IMPORTS.—(United Kingdom.)—First Eight Months (January—August), 1873-72-71-70-69.** — *Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Eight Months.) FOREIGN ARTICLES IMPORTED.	[000's omitted.]	1873.	1872.	1871.	1870.	1869.
		£	£	£	£	£
<b>RAW MATLS.—Textile, &amp;c.</b>						
Cotton Wool ....		41,606,	40,475,	39,064,	36,828,	34,304,
Wool (Sheep's) ..		20,082,	16,096,	15,303,	12,620,	11,281,
Silk*.....		8,556,	9,571,	9,995,	13,156,	10,415,
Flax .....		3,831,	3,418,	3,275,	3,825,	2,650,
Hemp .....		4,279,	4,694,	4,311,	2,815,	2,634,
Indigo .....		2,074,	2,367,	2,450,	2,152,	2,420,
		80,428,	76,621,	74,398,	71,396,	63,704,
" "	<i>Various.</i>					
Hides .....		4,673,	4,409,	3,077,	2,521,	1,793,
Oils .....		3,777,	3,030,	3,377,	2,428,	2,481,
Metals .....		8,232,	7,829,	6,218,	3,109,	3,170,
Tallow .....		1,980,	1,992,	1,721,	1,752,	1,339,
Timber.....		9,935,	8,022,	6,594,	5,184,	4,755,
		28,597,	25,282,	20,987,	14,994,	13,538,
" "	<i>Agreatl.</i>					
Guano .....		1,114,	737,	1,692,	2,182,	960,
Seeds .....		3,862,	4,330,	4,878,	1,572,	1,702,
		4,976,	5,067,	6,570,	3,754,	2,662,
<b>TROPICAL, &amp;c., PRODUCE.</b>						
Tea .....		5,899,	8,433,	7,628,	5,860,	5,300,
Coffee .....		5,601,	4,029,	4,114,	2,737,	3,151,
Sugar & Molasses		14,805,	14,594,	13,679,	12,820,	10,640,
Tobacco .....		2,567,	1,764,	2,657,	834,	646,
Rice .....		1,887,	1,532,	1,551,	883,	1,638,
Fruits .....		936,	1,232,	1,008,	619,	768,
Wines .....		5,375,	5,271,	4,820,	3,351,	3,706,
Spirits .....		2,041,	1,560,	2,139,	1,813,	1,384,
		39,111,	38,415,	37,596,	28,917,	27,233,
<b>FOOD</b> .....	<b>Grain and Meal.</b>					
	Provisions .....	33,342,	28,572,	25,212,	21,796,	20,828,
		16,044,	13,181,	11,793,	9,434,	9,372,
		49,386,	41,753,	37,005,	31,230,	30,200,
<b>Remainder of Enumerated Articles</b> ....		19,904,	24,890,	22,661,	10,175,	11,246,
<b>TOTAL ENUMERATED IMPORTS</b> ....		222,402,	212,028,	199,216,	160,466,	148,583,
<b>Add for UNENUMERATED IMPORTS (say)</b>		23,500,	22,000,	16,293,	40,116,	37,145,
<b>TOTAL IMPORTS</b> .....		245,902,	235,028,	215,510,	200,582,	185,728,

\* "Silk," inclusive of manufactured silk, "not made up."

**EXPORTS.—(United Kingdom.)—First Nine Months (January—September), 1873-72-71-70-69.** — Declared Real Value, at Port of Shipment, of Articles of BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.

(First Nine Months.) BRITISH PRODUCE, &c., EXPORTED.	[000's omitted.]	1873.	1872.	1871.	1870.	1869.
MANFRS.— <i>Textile.</i> Cotton Manufactures..	£	£	£	£	£	£
,, Yarn .....	47,089,	47,467,	43,118,	42,406,	39,459,	
Woollen Manufactures	11,735,	12,078,	11,096,	10,823,	10,484,	
,, Yarn .....	20,343,	25,815,	20,694,	16,343,	17,671,	
Silk Manufactures.....	3,963,	4,543,	4,457,	3,754,	4,465,	
,, Yarn .....	1,438,	1,743,	1,598,	1,762,	1,567,	
Linen Manufactures ....	1,280,	1,343,	975,	134,	166,	
,, Yarn .....	5,867,	6,367,	5,622,	5,528,	5,182,	
	1,624,	1,520,	1,699,	1,755,	1,721,	
	93,339,	100,876,	89,259,	82,505,	80,715,	
,, <i>Sewed.</i> Apparel .....	2,447,	2,170,	1,972,	1,472,	1,700,	
Haberdy. and Mllnry.	5,138,	5,097,	4,524,	3,605,	3,537,	
	7,585,	7,267,	6,496,	5,077,	5,237,	
METALS, &c. ..... Hardware .....	3,727,	3,684,	2,803,	3,339,	3,239,	
Machinery .....	7,397,	5,597,	4,210,	4,094,	3,745,	
Iron .....	29,144,	26,591,	19,338,	16,370,	14,713,	
Copper and Brass.....	2,794,	2,655,	2,379,	2,345,	2,515,	
Lead and Tin .....	1,167,	1,406,	1,228,	3,519,	3,473,	
Coals and Culm .....	9,924,	7,209,	4,490,	4,132,	3,786,	
	54,153,	47,142,	34,448,	33,799,	31,471,	
<i>Ceramic Manufcts.</i> Earthenware and Glass	2,631,	2,258,	1,887,	1,888,	1,993,	
Indigenous Mnfrs. Beer and Ale.....	1,830,	1,530,	1,386,	1,451,	1,417,	
and Products. Butter .....	192,	219,	236,	212,	196,	
Cheese .....	55,	56,	68,	78,	74,	
Candles .....	157,	171,	130,	82,	128,	
Salt.....	607,	392,	359,	294,	332,	
Spirits .....	166,	164,	148,	138,	172,	
Soda .....	2,222,	1,814,	1,268,	1,083,	1,033,	
	5,229,	4,346,	3,595,	3,338,	3,352,	
Various Manufcts. Books, Printed .....	661,	629,	506,	448,	484,	
Furniture .....	—	—	—	163,	176,	
Leather Manufactures	2,523,	2,668,	2,769,	1,806,	1,926,	
Soap .....	180,	228,	167,	164,	163,	
Plate and Watches ....	182,	143,	131,	359,	372,	
Stationery .....	490,	467,	376,	358,	352,	
	4,036,	4,135,	3,949,	3,293,	3,473,	
Remainder of Enumerated Articles .....	13,773,	12,667,	13,830,	10,592,	9,138,	
Unenumerated Articles .....	12,930,	11,624,	10,126,	8,142,	7,328,	
TOTAL EXPORTS.....	193,676,	190,315,	163,590,	148,634,	142,707,	

**SHIPPING.—(United Kingdom.)—Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the Nine Months ended September, 1873-72-71.**

Countries from whence Entered and to which Cleared.	Total British and Foreign.					
	1873.		1872.		1871.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
<b>FOREIGN COUNTRIES.</b>						
Russia { Northern ports ....	847,992	606,644	699,592	573,835	760,015	703,097
Southern „ „ „	295,633	122,289	449,506	160,125	411,726	166,836
Sweden .....	750,827	440,271	706,972	411,705	707,475	326,604
Norway .....	700,038	220,295	622,014	210,919	613,529	215,805
Denmark .....	129,727	378,986	135,767	403,723	102,209	387,640
Germany .....	1,245,514	1,590,546	1,144,329	1,845,166	1,141,022	1,853,580
Holland .....	625,422	827,726	614,430	814,948	549,891	768,200
Belgium .....	618,184	688,082	587,823	575,470	512,229	563,393
France .....	1,245,718	1,863,404	1,187,455	1,787,360	919,723	1,827,316
Spain .....	776,010	404,000	641,095	415,128	478,738	394,907
Portugal .....	239,877	218,441	207,040	185,314	191,958	165,608
Italy .....	178,217	544,326	192,447	572,726	162,779	499,140
Austrian territories .....	17,550	75,851	29,648	130,177	55,122	131,371
Greece .....	72,815	63,213	80,313	48,384	47,061	46,964
Turkey (including Wallachia and Moldavia) .....	231,917	256,409	190,026	282,797	243,866	273,834
Egypt .....	299,560	396,705	337,754	358,790	265,377	390,986
United States of America .....	2,265,946	1,725,138	1,877,478	1,790,693	1,953,853	1,893,684
Mexico, Foreign West Indies, and Central America .....	239,832	304,498	246,310	290,877	152,253	267,543
Brazil .....	186,908	353,740	200,449	295,924	149,657	281,587
Peru .....	189,061	133,441	111,769	200,673	145,784	122,676
Chili .....	68,349	179,073	74,423	168,553	46,097	101,363
China .....	80,642	14,837	78,223	51,895	75,709	46,811
Other countries .....	376,157	476,014	393,541	455,078	314,450	394,719
<i>Total, Foreign Countries</i>	<i>11,681,896</i>	<i>11,883,929</i>	<i>10,808,404</i>	<i>12,030,260</i>	<i>10,000,523</i>	<i>11,823,664</i>
<b>BRITISH POSSESSIONS.</b>						
North American Colonies .....	772,574	563,209	782,755	688,907	683,339	709,987
East Indies, including { Ceylon, Singapore, and Mauritius .....	716,358	854,111	754,307	793,992	624,755	841,515
Australia and New Zealand .....	223,840	331,741	192,204	271,123	192,804	216,797
West Indies .....	182,675	111,447	188,790	119,854	208,192	135,834
Channel Islands .....	185,997	129,676	187,055	140,623	174,994	128,755
Other possessions .....	154,977	548,457	139,731	572,837	136,176	461,465
<i>Total, British Possessions</i>	<i>2,236,421</i>	<i>2,538,641</i>	<i>2,244,842</i>	<i>2,587,336</i>	<i>2,020,260</i>	<i>2,494,353</i>
<b>TOTAL FOREIGN COUNTRIES AND BRITISH POSSESSIONS.</b>						
Nine months ended September { 1873 .....	13,918,317	14,422,570	—	—	—	—
„ „ „ '72 .....	—	—	13,053,246	14,617,596	—	—
„ „ „ '71 .....	—	—	—	—	12,020,783	14,318,017

**GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED—(United Kingdom.)—Computed Real Value for the Nine Months (January—September), 1873-72-71.**

[000's omitted.]

(First Nine Months.)	1873.		1872.		1871.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
<b>Imported from:—</b>						
Australia .....	7,033,	16,	4,520,	15,	5,114,	14,
So. Amca. and W. Indies .....	2,061,	2,432,	585,	1,881,	943,	2,531,
United States and Cal. ....	3,127,	4,780,	7,189,	3,520,	6,407,	4,471,
	12,191,	7,228,	12,294,	5,416,	12,464,	7,016,
France.....	525,	1,020,	549,	546,	141,	66,
Germany, Holl. & Belg. ....	68,	189,	416,	2,363,	1,368,	365,
Prtgl., Spain, and Gbrltr.....	132,	61,	57,	44,	47,	41,
Mlta., Trky., and Egypt .....	1,401,	30,	84,	50,	188,	90,
China .....	56,	127,	—	62,	2,	2,313,
West Coast of Africa	59,	6,	81,	—	106,	4,
All other Countries....	239,	810,	193,	81,	1,175,	1,483,
<i>Totals Imported....</i>	<i>14,671,</i>	<i>9,471,</i>	<i>13,674,</i>	<i>8,562,</i>	<i>15,491,</i>	<i>11,378,</i>
<b>Exported to:—</b>						
France.....	532,	2,808,	972,	722,	1,491,	891,
Germany, Holl. & Belg. ....	6,375,	1,272,	5,377,	1,047,	5,770,	5,167,
Prtgl., Spain, and Gbrltr.....	3,210,	129,	1,248,	550,	569,	976,
	10,117,	4,209,	7,597,	2,319,	7,830,	7,034,
Ind. and China (via Egypt).....	1,013,	2,255,	825,	4,551,	865,	1,533,
Danish West Indies	—	—	—	—	—	—
United States .....	677,	2,	—	—	53,	1,
South Africa .....	214,	45,	1,036,	74,	493,	6,
Mauritius .....	—	—	—	—	—	—
Brazil .....	207,	—	295,	—	977,	—
All other Countries....	2,324,	1,381,	4,766,	921,	708,	395,
<i>Totals Exported....</i>	<i>14,552,</i>	<i>7,892,</i>	<i>14,519,</i>	<i>7,865,</i>	<i>10,926,</i>	<i>8,969,</i>
Excess of Imports ....	119,	1,579,	—	697,	4,565,	2,409,
,, Exports ....	—	—	845,	—	—	—

## REVENUE.—(UNITED KINGDOM.)—30TH SEPTEMBER, 1873-72-71-70.

Net Produce in QUARTERS and YEARS ended 30th SEPT., 1873-72-71-70.

[000's omitted.]

QUARTERS, ended 30th Sept.	1873.	1872.	1873.		Corresponding Quarters.	
			Less.	More.	1871.	1870.
Customs .....	£ 5,012,	£ 5,051,	£ 39,	—	£ 4,964,	£ 4,828,
Excise .....	5,499,	5,365,	—	134,	4,607,	4,559,
Stamps .....	2,606,	2,258,	—	348,	2,417,	2,120,
Taxes .....	90,	81,	—	9,	107,	93,
Post Office .....	1,872,	1,200,	—	672,	1,112,	1,110,
Telegraph Service ....	460,	250,	—	210,	255,	100,
	15,539,	14,205,	39,	1,373,	13,462,	12,810,
Property Tax .....	457,	589,	132,	—	608,	448,
	15,996,	14,794,	171,	1,373,	14,070,	13,258,
Crown Lands .....	70,	70,	—	—	74,	75,
Miscellaneous.....	1,276,	946,	—	330,	870,	869,
<i>Totals</i> .....	17,342,	15,810,	171,	1,703,	15,014,	14,202,
			NET INCR. £1,532			

YEARS, ended 30th Sept.	1873.	1872.	1873.		Corresponding Years.	
			Less.	More.	1871.	1870.
Customs .....	£ 20,900,	£ 20,626,	—	274,	£ 20,025,	£ 20,542,
Excise .....	26,109,	24,719,	—	1,390,	23,032,	22,291,
Stamps .....	10,415,	9,761,	—	654,	9,419,	8,965,
Taxes .....	2,359,	2,369,	10,	—	2,324,	3,544,
Post Office .....	5,472,	4,838,	—	634,	4,732,	4,630,
Telegraph Service ....	1,100,	805,	—	295,	685,	340,
	66,355,	63,118,	10,	3,247,	60,217,	60,312,
Property Tax .....	6,933,	9,802,	2,869,	—	6,487,	7,765,
	73,288,	72,920,	2,879,	3,247,	66,704,	68,077,
Crown Lands .....	375,	371,	—	4,	384,	377,
Miscellaneous.....	3,766,	3,771,	5,	—	4,196,	3,417,
<i>Totals</i> .....	77,429,	77,062,	2,884,	3,251,	71,284,	71,871,
			NET INCR. £367			

## REVENUE.—UNITED KINGDOM.—QUARTER ENDED 30TH SEPT., 1873:—

*An Account showing the REVENUE and other RECEIPTS in the QUARTER ended 30th September, 1873; the ISSUES out of the same, and the Charges on the Consolidated Fund at that Date, and the Surplus or Deficiency of the Balance in the Exchequer on the 30th of September, 1873, in respect of such Charges.*

## Received:—

	£
Income received, as shown in Account I .....	17,342,489
Amount received in Repayment of Advances for Public Works, &c. ...	538,776
,, for Greenwich Hospital .....	57,160
	<hr/>
Total .....	£17,938,375

Excess of the Sums charged on the Consolidated Fund on the 30th of September, 1873, payable in December quarter, 1873, above the Balance in the Exchequer at that date, viz.:—

Excess of Charge in Great Britain.....	£2,139,276
Surplus overcharge in Ireland.....	64,446
	<hr/>
Net deficiency .....	*2,074,830
	<hr/>
	£20,013,205
	<hr/>

## Paid:—

	£
Net Deficiency of the Balance in the Exchequer to meet the Charge } on the 30th of June, 1873, as per last Account .....	954,158
Amount applied out of the Income to Supply Services .....	12,058,117
,, advanced for Greenwich Hospital .....	57,160

Charge of the *Consolidated Fund* on the 30th of September, 1873, viz.:—

Interest of the Permanent Debt .....	£4,789,670
Terminable Annuities .....	570,641
Interest of Exchequer Bills .....	25,488
The Civil List .....	101,535
Other Charges on Consolidated Fund .....	294,098
Advances for Public Works, &c. ....	543,598
Sinking Fund .....	618,740
	<hr/>
Total .....	6,943,770
	<hr/>
	20,013,205
	<hr/>

* Charge on 30th of September, 1873 (as above) .....	£6,943,770
Paid out of growing produce in September quarter, 1873 .....	708,279
	<hr/>
Portion of the Charge payable in December quarter, 1873 .....	6,235,491
To meet which there was in the Exchequer on the 30th of } September, 1873.....	4,160,661
	<hr/>
Net deficiency as above .....	2,074,830
	<hr/>

**BRITISH CORN.—Gazette Average Prices (ENGLAND AND WALES),  
Third Quarter of 1873.**

[This Table is communicated by the Statistical and Corn Department, Board of Trade.]

Weeks ended on Saturday.	Weekly Average. (Per Impl. Quarter.)					
	Wheat.		Barley.		Oats.	
1873.	s.	d.	s.	d.	s.	d.
July 5 .....	59	1	36	7	28	1
,, 12 .....	59	5	37	7	29	-
,, 19 .....	59	6	35	10	27	4
,, 26 .....	60	1	36	-	30	10
<i>Average for July</i> .....	59	6	36	6	28	10
August 2 .....	59	9	36	8	28	5
,, 9 .....	59	11	34	11	27	5
,, 16 .....	60	3	37	2	28	8
,, 23 .....	60	3	39	6	29	9
,, 30 .....	62	5	39	11	28	9
<i>Average for August</i> .....	60	6	37	7	28	7
September 6 .....	63	4	42	5	27	1
,, 13 .....	64	7	43	8	29	-
,, 20 .....	64	7	45	1	27	5
,, 27 .....	64	2	44	8	27	-
<i>Average for September</i> .....	64	2	43	11	27	7
<i>Average for the quarter</i> .....	61	4	39	13	28	4

## BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the THIRD QUARTER (July—September) of 1873.

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.		
£ Mlns.	1873.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1873. Per cent.
36,48	July 2 ....	11,02	3,98	21,48	26,06	11 June 6
36,62	„ 9 ....	11,02	3,98	21,62	26,19	10 July 5
36,79	„ 16 ....	11,02	3,98	21,79	26,10	16 „ 4½
37,48	„ 23 ....	11,02	3,98	22,48	25,87	23 „ 4
37,61	„ 30 ....	11,02	3,98	22,61	25,89	30 „ 3½
37,98	Aug. 6 ....	11,02	3,98	22,98	26,62	
38,10	„ 13 ....	11,02	3,98	23,10	26,24	
38,37	„ 20 ....	11,02	3,98	23,37	25,90	20 Aug. 3
38,29	„ 27 ....	11,02	3,98	23,29	25,76	
38,37	Sept. 3 ....	11,02	3,98	23,37	26,31	
38,31	„ 10 ....	11,02	3,98	23,31	25,85	
38,28	„ 17 ....	11,02	3,98	23,28	24,57	25 Sept. 4
37,94	„ 24 ....	11,02	3,98	22,94	25,30	29 „ 5

## BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					Assets.					Totals of Liabili- ties and Assets.
Capital and Rest.	Deposits.		Seven Day and other Bills.	DATES.	Securities.		Reserve.			
Capital.	Rest.	Public.	Private.	(Wdnsdys.)	Govern- ment.	Other.	Notes.	Gold and Silver Coin.		
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1873.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,30	11,50	19,11	,41	July 2	13,26	24,33	10,42	,86	48,87
14,55	3,43	5,76	19,95	,42	„ 9	13,29	19,67	10,43	,75	44,13
14,55	3,47	5,73	18,61	,46	„ 16	13,28	18,24	10,69	,62	42,83
14,55	3,48	6,05	18,49	,46	„ 23	13,28	17,41	11,61	,74	43,04
14,55	3,49	6,18	18,23	,43	„ 30	13,30	17,15	11,72	,70	42,89
14,55	3,50	6,46	17,22	,41	Aug. 6	13,27	16,88	11,36	,64	42,15
14,55	3,51	6,55	17,44	,43	„ 13	13,30	16,47	11,86	,85	42,48
14,55	3,49	6,34	18,29	,41	„ 20	13,30	16,49	12,47	,82	43,07
14,55	3,49	6,41	19,28	,39	„ 27	13,30	17,51	12,53	,79	44,13
14,55	3,80	6,28	21,32	,47	Sept. 3	13,30	20,36	12,06	,70	46,42
14,55	3,81	6,90	22,18	,45	„ 10	13,26	21,45	12,46	,71	47,89
14,55	3,84	7,36	22,06	,48	„ 17	13,27	21,67	12,71	,63	48,29
14,55	3,85	8,07	21,38	,44	„ 24	13,27	21,79	12,64	,60	48,29

## LONDON CLEARING; CIRCULATION, PRIVATE AND PROVINCIAL.

*The London Clearing, and the Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday in each Week during the THIRD QUARTER (July—September) of 1873; and in SCOTLAND and IRELAND, at the Three Dates, as under.*

[0,000's omitted.]

ENGLAND AND WALES.				SCOTLAND.				IRELAND.			
DATES. Saturday.	London: Cleared in each Week ended Wednesday.*	Private Banks. (Fixed Issues, 3,93).	Joint Stock Banks. (Fixed Issues, 2,74).	TOTAL. (Fixed Issues, 6,66).	Weeks ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35).
1873.		£	£	£	1873.	£	£	£	£	£	£
Jly. 5	148,40	2,59	2,36	4,95							
, 12	112,66	2,60	2,39	4,99	July 12	1,83	3,72	5,55	3,80	2,81	6,61
, 19	133,61	2,58	2,36	4,94							
, 26	107,14	2,56	2,33	4,89							
Aug. 2	96,01	2,54	2,32	4,86							
, 9	134,24	2,53	2,31	4,84	Aug. 9	1,79	3,71	5,50	3,72	2,80	6,52
, 16	109,85	2,49	2,30	4,79							
, 23	128,50	2,46	2,29	4,75							
, 30	90,05	2,48	2,30	4,78							
Sept. 6	122,48	2,50	2,33	4,83	Sept. 6	1,78	3,72	5,50	3,63	2,83	6,46
, 13	92,85	2,54	2,35	4,89							
, 20	117,70	2,59	2,38	4,97							
, 27	84,60	2,68	2,41	5,09							

\* The Wednesdays preceding the Saturdays.

## FOREIGN EXCHANGES.—Quotations as under, LONDON on Paris, Hamburg and Calcutta;—and New York, Calcutta, Hong Kong and Sydney, on LONDON.

DATES.	1	2	3	4	5		7	8	9			
					Calcutta.							
					New	At						
		London on Paris.	London on Hamburg.		India Council.	Calcutta on London.	Hong Kong.	Sydney.	Standard Silver in bars in London			
		3 m.d.	3 m.d.	60 d. s.	60 d. s.	6 m. d.	6 m. d.	30 d. s.	pr. oz.			
1873.				per. cent.	d.	d.	d.	per cent.	d.			
Jly. 5 .....	25·92½	20·57	109½	—	—	23½	54	—	59½			
, 19 .....	25·90	20·55	—	—	—	—	—	—	“			
Aug. 2 .....	25·87½	20·52	108½	22¾	22¾	53	—	—	59½			
, 16 .....	25·82½	“,	108½	22½	22½	52	—	—	59			
Sept. 6 .....	25·82½	20·52	107½	22¼	22¾	51¾	—	—	58½			
, 20 .....	25·75	20·53	108½	22½	22½	51¾	—	—	59½			

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(Corrected to December, 1873.)

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(FOUNDED 1834,)

12, ST. JAMES'S SQUARE, LONDON, S.W.

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1873	Brassey, Thomas, M.P., 24, Park-lane, W.
1867	Bremner, John A., Hilton House, Prestwich, Manchester.

Year of Election.	
1856	Briggs, General John, F.R.S., F.G.S., 2, Tenterden-street, Hanover-square, W
1873	Briggs, Thomas, <i>Holmstead, Richmond, Surrey.</i>
1872	Brind, Frederick William, <i>Bickley, Kent.</i>
1844	Bristow, Alfred Rhodes, 39, Parliament-street, S.W.
1873	Brogden, Alexander, M.P., 51, Prince's Gate, S.W.
1872	Brown, James Bryce, 90, Cannon-street, E.C.
1837	*BROWN, SAMUEL, F.I.A. ( <i>VicePresident</i> ), 11, Lombard-street, E.C.
1866	Brown, Thomas, jun., 135, Buchanan-street, Glasgow.
1873	Browne, Edward W., 13, Queen-street, Edinburgh.
1873	Browning, Arthur Giraud, 17, Albert Mansions, Victoria-street, S.W..
1868	Bryant, William Charles, 11, Sydney-place, Onslow-square, S.W.
1872	Buckley, Nathaniel, M.P., <i>Reform Club, S.W.</i>
1865	Bunce, John Thackray, “Daily Post” Office, Birmingham.
1873	Burdett-Coutts, The Right Hon. the Baroness, 1, Stratton-street, Piccadilly, W., and Holly Lodge, Highgate, N.
1863	Burnett, Alexander Smith, F.I.A., Bridge Town, Barbadoes, West Indies.
1872	Burns, Rev. Dawson, M.A., 52, Parliament-street, S.W.
1873	Burns, John J. D., M.D., R.N., <i>The Convict Prison, Chatham.</i>
1873	Burrow, Robert Foster, 25, Finsbury-place, E.C.
1868	Burton, Samuel Warren, <i>The Hermitage, Tunbridge, Kent.</i>
1871	Byrne, William Alfred, Ghazepore, North West Provinces, India.
1857	Caird, James, C.B., 3, St. James's-square, S.W.; and Cassencarie, Kirkcudbrightshire.
1871	Campbell, Robert, M.A., 16, Old-buildings, Lincoln's Inn, W.C.
1862	Cape, George A., 8, Old Jewry, E.C.
1872	Carillon, J. Wilson, Wormhill, Buxton.

Year of Election.	
1871	Carnac, Harry Rivett-, <i>Calcutta, India.</i>
1867	Carriás, Victoriano, <i>Brentwood Cottage, John-street, Hampstead, N.W.</i>
1862	Carter, Henry Bonham, <i>11, Lombard-street, E.C.</i>
1848	Carter, John Bonham, M.P., <i>25, Ashley-place, Victoria-street, S.W.</i>
1858	Chadwick, David, M.P., <i>27, Belsize-park, N.W.</i>
1834	CHADWICK, EDWIN, C.B., <i>Park Cottage, East Sheen, Mortlake, S.W.</i>
1869	Chadwick, John Oldfield, <i>65, Moorgate-street, E.C.</i>
1873	Charlesworth, Frederic, <i>Widmore, Bromley, Kent.</i>
1863	Charlton, W. H., <i>Hesleyside, near Hexham, Northumberland.</i>
1873	Charrington, Thomas, <i>Mayfield, Chislehurst, Kent.</i>
1862	Cheetham, John, <i>Stalybridge.</i>
1851	*Cheshire, Edward, <i>26, Old Broad-street, E.C., and Conservative Club, S.W.</i>
1853	Chisholm, David, F.I.A., <i>64, Princes-street, Edinburgh.</i>
1862	Christie, Richard Copley, M.A., <i>2, St. James's-square, Manchester.</i>
1869	CHUBB, HAMMOND, B.A., <i>Bickley, Kent.</i>
1856	Clark, Sir John Forbes, Bart., <i>38, Cornwall-gardens, W.</i>
1849	Clark, Gordon Wyatt, <i>72, Great Tower-street, E.C.; and Chessington, Surrey</i>
1856	*CLARKE, HYDE, D.C.L., <i>32, St. George's-square, S.W.</i>
1871	Clarke, Ebenezer, jun., <i>52, Cannon-street, E.C.</i>
1850	Cleghorn, John, <i>3, Spring-gardens, S.W.</i>
1853	*Cleveland, His Grace the Duke of, K.G., <i>17, St. James's-square, S.W.</i>
1845	Clirehugh, William Palin, F.I.A., <i>158, Leadenhall-street, E.C.</i>
1838	Cobb, Timothy Rhodes, <i>Banbury.</i>
1873	Cockle, Captain George, F.R.G.S., <i>9, Bulton-gardens, South Kensington, S.W.</i>
1859	Colebrooke, Sir Thomas Edward, Bart., M.P., <i>37, South-street, W.</i>

Year of Election	
1867	Coles, John, F.I.A., 39, <i>Throgmorton-street, E.C.</i>
1843	Colman, Jeremiah James, M.P., <i>Carrow House, Norwich.</i>
1867	*Copperthwaite, Charles William, <i>New Malton, Yorkshire.</i>
1873	Cork, Nathaniel, F.R.G.S., 39, <i>Lombard-street, E.C.</i>
1866	Cotton, Francis Lovett, <i>Baltic Chambers, 108, Bishopsgate-street Within, E.C.</i>
1862	COURTNEY, PROF. LEONARD HENRY, <i>Chapel Staircase, Lincoln's-inn, W.C.</i>
1873	Cowper, Hon. Henry Frederick, M.P., 4, <i>St. James's-square, S.W.</i>
1857	*Cowper-Temple, Rt. Hon. William Francis, M.P., 27, <i>Prince's-gate, W.</i>
1870	Craik, George Lillie, 16, <i>Bedford-street, Strand, W.C.</i>
1872	Crellin, Philip, 15, <i>Coleman-street, E.C.</i>
1873	Cromwell, The Rev. Canon, M.A., <i>St. Mark's College, Chelsea, S.W.</i>
1862	Cudlip, Joseph Stevens, F.I.A., 44, <i>Union-street, Plymouth.</i>
1848	Cutcliffe, George, F.I.A., 13, <i>St. James's-square, S.W.</i>
1873	Czarnikow, Cæsar, <i>Mitcham, Surrey.</i>
1853	Dalhousie, The Right Hon. the Earl of, K.T., G.C.B., P.C., <i>Brookes's Club, S.W.</i>
1869	Dalyell, R. Anstruther, <i>Civil Service, Madras.</i>
1873	Danvers, Juland, <i>India Office, S.W.</i>
1869	Davies, James Mair, 135, <i>Buchanan-street, Glasgow</i>
1864	Davis, W. H.,
1855	*Dawbarn, William, <i>Elmswood Hall, Aigburth, Liverpool.</i>
1873	Dawson, James Thomas, 9, <i>Old Broad-street, E.C.</i>
1873	Delahunty, James, M.P. 2, <i>Savile-row, W.</i>
1873	Dent, Clinton Thomas, 12, <i>Hyde-park Gardens, W.</i>
1873	Dent, Edward, 12, <i>Hyde-park Gardens, W.</i>

Year of Election	
1855	*DERBY, THE RIGHT HONOURABLE THE EARL OF, P.C., F.R.S., <i>(Honorary Vice-President),</i> 23, St. James's-square; and Knowsley, Prescot, Lancashire.
1866	*Dilke, Sir Charles Wentworth, Bart., M.P., LL.M., 76, Sloane-street, S.W.
1873	Divett, Edward Ross, Reform Club, S.W.
1873	Dixon, George, M.P., 46, Queen's-gate, S.W.
1872	Droop, Henry Richmond, 1a, New-square, Lincoln's-inn, W.C.
1871	Duncan, James, 5, Highbury-hill, N.
1870	Duprat, Le Vicomte ( <i>Consul-Général de Portugal</i> ), 46, Palace-gardens-terrace, Kensington, W
1836	Edmonds, Thomas Rowe, B.A., 22, Brunswick-gardens, Kensington, W.
1869	Edmonds, William, Airedale Villa, Elm-grove, Southsea.
1872	Elliott, George, M.P., Park-street, Park-lane, W.
1842	Elliott, John Hawkins, 4, Martin's-lane, City, E.C.
1870	Ellis, S. W., High House, Thornwaite, near Ripley, Yorkshire.
1873	Ellissen, Adolf, 28, Maida-hill West, W.
1873	Elsey, John Green, J.P., Morant House, Addison-road, Kensington, W.
1873	Emanuel, Lewis, 36, Finsbury-circus, E.C.
1862	Evens, John Henry, 9, Finsbury-place, E.C.
1842	*Everest, Rev. Robert, Westwick House, Ascot.
1834	Eversley, The Right Honourable Viscount, D.C.L., LL.D., 114, Eaton-square, S.W.; and Winchfield, Hants.
1867	Fairley, William, Lydney, Gloucestershire.
1839	FARR, WILLIAM, M.D., D.C.L., F.R.S. ( <i>Honorary Vice-President</i> ), General Register Office, Somerset House, W.C.; and Southlands, Bromley, Kent.
1868	Farrell, John Douglas, 1, Burlington-gardens, Old Bond-street, W.

Year of Election	
1872	Feigan, John Albert, <i>Glen May, Fallowfield, Lancashire.</i>
1836	*Felkin, William, <i>Park, Nottingham.</i>
1864	Fellows, Frank P., <i>8, The Green, Hampstead, N.W.</i>
1834	Finch, John, <i>Heathside, Tunbridge Wells.</i>
1873	Fisher, Henry, <i>Midland Bank, Wolverhampton.</i>
1873	Fisher, Richard Charles, <i>6, New Bridge-street, E.C.</i>
1865	FitzWilliam, William Shelford, <i>28, Ovington-square, S.W.</i>
1841	Fortescue, The Right Honourable Earl, <i>Castle-hill, South Moulton, Devonshire.</i>
1871	Forwood, William Bower, <i>Ramlet, Blundellsands, Liverpool.</i>
1868	Fowler, William, M.P., <i>30, Lombard-street, E.C.</i>
1873	Franklin, Jacob Abraham, <i>58, Gower-street, Bedford-square, W.C.</i>
1844	*Freeland, Humphrey William, <i>Athenæum Club, S.W.; and Chichester.</i>
1872	Freeman, Francis, <i>63, Pall Mall, S.W.</i>
1852	Galsworthy, Edwin Henry, F.I.A., <i>18, Upper Wimpole-street, W.</i>
1873	*Galton, Capt. Douglas, R.E., C.B., F.R.S., <i>12, Chester-street, Grosvenor-place, S.W.</i>
1860	GALTON, FRANCIS, F.R.S., F.R.G.S., <i>42, Rutland Gate, S.W.</i>
1872	Gastrell, Colonel J. E. (care of H. J. Gastrell), <i>36, Lincoln's-inn-fields, W.C.</i>
1865	*Gibbons, Sir Sills John, Bart., <i>Calvert's-buildings, 17, Southwark-street, S.E.</i>
1872	Gibb, Thomas Eccleston, <i>16, Lady Margaret-road, N.W.</i>
1871	Gibbs, George Sleight, <i>Darlington.</i>
1867	GIFFEN, ROBERT ( <i>Honorary Secretary</i> ), <i>44, Pembroke-road, Kensington, W.</i>

Year of Election.	
1834	GLADSTONE, RIGHT HON. WILLIAM EWART, D.C.L., M.P. (Honorary Vice-President), 11, Carlton House-terrace, S.W.
1860	Glover, John, 22, Great St. Helen's, Bishopsgate-street, E.C.
1869	Goldney, Gabriel, M.P., Beechfield House, Chippenham; and Conservative Club, S.W.
1850	Goldsmid, Sir Francis Henry, Bart., M.P., Q.C., St. John's Lodge, Regent's-park, N.W.
1868	Göschen, Right Hon. George Joachim, M.P., 66, Mount-street, W.
1855	*Gosset, John Jackson, Thames Ditton, Surrey.
1873	Gouly, Edward James, Bullion Office, Bank of England, E.C.
1853	Gover, William Sutton, F.I.A., 4, Queen-street-place, Southwark Bridge, E.C.
1847	Gray, Thomas, 34, Fenchurch-street, E.C.
1834	Grey, Right Hon. Sir George, Bart., M.P., G.C.B., Fallodon, Chathill, Northumberland.
1868	Griffith, Edward Clifton, 48, Pall Mall, S.W.
1841	Griffith, John, 6, Hanover-terrace, Regent's-park, N.W.
1841	Griffith, Richard Clewin, F.R.G.S., 20, Gower-street, W.C.
1872	Griffiths, John George, 4, Lothbury, E.C.
1865	Gurney, Daniel, North Runcton, near King's Lynn, Norfolk.
1873	Gutch, John James, Holgate-Lodge, York.
1839	GUY, WILLIAM AUGUSTUS, M.B., F.R.S. (PRESIDENT), 26, Gordon-street, Gordon-square, W.C.
1867	Haddon, Frederick William, "Melbourne Argus" Office, Melbourne.
1873	Haggard, Frederick T., Eltham Court-road, Eltham, Kent.
1872	Haliburton, R. G., The Athenæum Club, S.W.
1871	Hall, Edward Hepple,
1869	Hall, James Macalester, Woodside-crescent, Glasgow.

Year of Election.	
1860	HAMILTON, ARCHIBALD, <i>South Barrow, Bromley, Kent.</i>
1873	Hamilton, Lord George Francis, M.P., <i>17, Montagu-street, Portman-square, W.</i>
1841	Hamilton, Terrick, F.R.G.S., <i>21, Park-street, Grosvenor-square, W.</i>
1855	HAMMICK, JAMES THOMAS ( <i>Treasurer</i> ), <i>General Register Office, Somerset House, W.C.</i>
1873	Hanbury, Robert William, M.P., <i>East Close, Christchurch, Hants.</i>
1869	Hancock, William, <i>33, Cornhill, E.C.</i>
1837	*Hankey, John Alexander, <i>Balcombe-place, Cuckfield, Sussex.</i>
1861	Hannington, Major-General John Caulfield, F.I.A., <i>India Office, S.W.</i>
1871	Harcourt, William Vernon, Q.C., M.P., <i>14, Stratford-place, W.</i>
1871	Hare, Francis Augustus Cox, <i>King-street, Manchester.</i>
1866	Harper, Frederick H., <i>18, Coleman-street, E.C.</i>
1868	Harris, David, <i>Ellerton, Grange Loan, Edinburgh.</i>
1868	Harrison, John, jun., <i>85, Northgate, Darlington.</i>
1870	Hartley, Fountain John, <i>Laurel House, Graham-road, Dalston, N.E.</i>
1834	HARROWBY, THE RIGHT. HON. THE EARL OF, K.G., F.R.S. ( <i>Honorary Vice-President</i> ), <i>39, Grosvenor-square, W.</i>
1873	Haughton, Benjamin, C.E., <i>1, Westminster-chambers, Victoria-street, S.W.</i>
1834	Hawkins, Francis Bisset, M.D., F.R.S., <i>146, Harley-street, W.</i>
1834	Hawkins, John Heywood, M.A., F.R.S., <i>Bignor Park, Pulborough.</i>
1873	Hay, James Lamb Napier, <i>Bengal Club, Calcutta.</i>
1871	Head, Jeremiah, <i>Coatham, Redcar, Yorkshire.</i>
1870	Hefford, G. V., <i>Rugby.</i>
1860	Helder, Stewart, F.I.A., <i>2, Broad Sanctuary, S.W.</i>
1865	Hendriks, Augustus, F.I.A., <i>7, Cornhill, E.C.</i>
1855	*HENDRIKS, FREDERICK, <i>1, King William-street, E.C.</i>
1858	Herapath, Spencer, <i>19, Sheffield-terrace, Campden-hill, Kensington, W.</i>

Year of Election.	
1870	Hewitt, John, <i>Gand's Ship Building Company, Hedon-road, Hull.</i>
1873	Hewlings, Stewart, <i>London and County Bank, 21, Lombard-street, E.C.</i>
1834	*HEYWOOD, JAMES, M.A., F.R.S. ( <i>Trustee and Vice-President</i> ), <i>Athenæum Club, S.W.; and 26, Palace-gardens, Ken-</i> <i>sington, W.</i>
1869	Hickson, Joseph, <i>Montreal, Canada.</i>
1834	Hill, Sir Rowland, K.C.B., D.C.L., F.R.S., <i>Hampstead, N.W.</i>
1873	Hime, Capt. H. W. L., R.A., <i>Aldershot.</i>
1859	Hincks, His Excellency, Sir Francis, <i>Montreal, Canada.</i>
1870	*HOARE, HENRY, <i>9, St. James's-square, S.W.</i>
1858	Hobson, Jesse, <i>Grove House, Shacklewell, E.</i>
1834	*Hodge, William Barwick, F.I.A., <i>5, Whitehall, S.W.</i>
1867	Hodgson, W. B., LL.D., <i>4, Morningside-place, Edinburgh.</i>
1873	Hogg, Lt.-Col. James Macnaughten, M.P., <i>26, Grosvenor-gardens, S.W.</i>
1871	Hooper, Angus Cameron, <i>Montreal, Canada.</i>
1868	Hope, William, <i>Parsloes, Barking.</i>
1855	HOUGHTON, THE RIGHT HONOURABLE LORD, D.C.L., F.R.S. ( <i>Honorary Vice-President</i> ), <i>Fryston Hall, Ferrybridge, Yorkshire.</i>
1871	Howis, William,
1872	Hubbard, Egerton, <i>24, Princes-gate, S.W.</i>
1853	*Hubbard, John Gellibrand, <i>Bank of England, E.C.</i>
1864	Hudson, Thomas, <i>12, Wellington-place, Ashley-road, Bristol.</i>
1871	Hughes, Albert William, <i>Kurrachee, Bombay, India.</i>
1872	Humphreys, George, M.A., F.I.A., <i>79, Pall Mall, S.W.</i>
1873	Hunt, Henry Arthur, C.B., <i>54, Eccleston-square, S.W.</i>
1857	Hurst, George, <i>King's Brook House, St. Mary's, Bedford.</i>

Year of Election.	Name and Address.
1873	Hyndman, Henry Mayer, <i>10, Devonshire-street, Portland-place, W.</i>
1869	Imrie, Peter,
1866	Ince, Henry Bret, <i>2, Old-square, Lincoln's-inn, W.C.</i>
1869	Ingall, Samuel, <i>Kent-end, Forest-hill, Kent, S.E.</i>
1869	Inglis, Cornelius, M.D., <i>Athenæum Club, S.W.</i>
1839	Irving, John, <i>94, Eaton-place S.W.</i>
1869	Isaacs, Henry A., <i>Hillworth Lodge, Lower Tulse-hill, Brixton S.W.</i>
1864	*Ivey, George Pearse, <i>Perry-hill, Catford, S.E.</i>
1872	JANSON, FREDERICK H., F.L.S., <i>41, Finsbury-circus, E.C., and Oak Bank, Chislehurst.</i>
1851	*Jellicoe, Charles, F.I.A., <i>12, Cavendish-place, W.</i>
1862	JEULA, HENRY, <i>29, Gracechurch-street, E.C.</i>
1864	*Jevons, Professor William Stanley, M.A., <i>Parsonage-road, Withington, Manchester.</i>
1871	Johnson, Edmund, <i>3, Northwick Terrace, Maida-hill, N.W.</i>
1872	Johnston, Francis J., <i>Lamas, Chislehurst.</i>
1873	Jones, Sir Willoughby, Bart., M.A., <i>Cranmer Hall, Fakenham, Norfolk.</i>
1858	JOURDAN, FRANCIS, <i>Avenue House, Hampstead, N.W.</i>
1862	Kain, George James, <i>69, Chancery-lane, W.C.</i>

Year of Election.	
1873	Kay, Duncan James, 60, Queen's-gate, S.W.
1867	Kelly, Edward Robert, A.M., <i>Cressy House, New-road, Shepherd's-bush, W.</i>
1873	Kemp, Samuel, <i>Oriel House, Bath.</i>
1864	Kennedy, Lieut.-Col. John Pitt, 66, St. George's-square, S.W.
1868	Kennedy, Peter, 13, Cornwall-terrace, Regent's-park, N.W.
1870	Kennedy, William R., 27, Rodney-street, Liverpool
1852	Kimberley, The Right Honourable the Earl of, M.A., P.C., 48, Bryanston-square, W.
1873	King, George, 20, King William-street, E.C.
1872	Knight, John P., <i>London, Brighton, and South Coast Railway, London Bridge, E.C.</i>
1865	Knight, Robert, "Times of India" Office, Bombay.
1865	Kühner, Henry, 39, Lombard-street, E.C.
1869	Kyshe, John B. <i>Mauritius.</i>
1873	Lack, H. Reader, <i>Board of Trade, Whitehall-gardens, S.W.</i>
1863	Lambert, John, <i>Local Government Board, Whitehall, S.W.</i>
1869	Lamport, Charles, <i>Plasmawr, Penmaen Mawr, North Wales.</i>
1873	Lancaster, D., <i>Indian Life Association Company, Meerut, India.</i>
1844	*Larcom, Major-General, Sir T. A., Bart., K.C.B., <i>Heathfield, Fareham, Hants.</i>
1873	Lawrence, The Right Hon. Lord, G.C.B., G.C.S.I., 26, Queen's-gate, S.W.
1873	Lawrie, James, F.R.G.S., <i>Kelvin House, Quadrant-road, Highbury, N.</i>
1869	Lawson, John Ancram, B.A.,
1873	Lawson, Robert, 30, Lansdowne-road, Notting-hill, W.
1873	Lea, Thomas, M.P., 72, Chester-square, S.W.
1834	*Leaf, William, <i>Old Change, Cheapside, E.C.</i>

Year of Election	
1834	Le Marchant, Sir Denis, Bart., <i>Chobham, Surrey.</i>
1870	Leitch, John Muir, 18, <i>King William-street, E.C.</i>
1873	Leslie, Francis Seymour, <i>Home Office, Whitehall, S.W.</i>
1851	LEVI, PROFESSOR LEONE, LL.D., 10, <i>Farrar's-buildings, Temple, E.C. ; and 20, Thornhill- crescent, Caledonian-road, N.</i>
1867	Lewis, Charles Edward, 8, <i>Old Jewry, E.C.</i>
1853	Lewis, Charles Terrell, F.I.A., <i>West of England Assurance, Exeter.</i>
1873	Lewis, James, <i>General Register Office, Somerset House, W.C.</i>
1862	Lewis, Robert, 1, <i>Bartholomew-lane, E.C.</i>
1862	Leyland, John E., F.I.A., 35, <i>Plough-court, Lombard-street, E.C.</i>
1868	Lissa, Joseph J. Cohen de, <i>Port Louis, Mauritius.</i>
1845	*Lister, William, 11, <i>Somers'-place, Hyde-park, W.</i>
1834	Lloyd, John Horatio, 10, <i>Lancaster-gate, Hyde-park, W.</i>
1864	Logan, D., <i>Care of Messrs. Richardson, 23, Cornhill, E.C.</i>
1869	Lopes, Sir Lopes Massey, Bart., M.P., <i>Maristow House, Plymouth ; 28, Grosvenor Gardens, S.W.</i>
1834	Lovelace, The Right Houourable the Earl of, F.R.S., <i>East Horsley Park, Ripley, Surrey.</i>
1865	LUBBOCK, SIR JOHN, BART., M.P., F.R.S. (Trustee), <i>High Elms, Farnborough, Kent.</i>
1843	LUMLEY, WILLIAM GOLDEN, LL.M., Q.C. (Vice-President), <i>Local Government Board, Whitehall, S.W.</i>
1871	Lutchmeepathy, C. P., Naidoo Garoo, <i>Madras, India.</i>
1873	*Macandrew, William, J.P., <i>Westwood House, near Colchester.</i>
1873	McArthur, A., <i>Raleigh Dale, Brixton, S.W.</i>
1873	McArthur, William, M.P., F.R.G.S. (Alderman), <i>Gwydyr House, Brixton, S.W.</i>
1867	McClean, Frank, 21, <i>Whitehall-place, S.W.</i>
1864	MacClelland, James, 32, <i>Pembridge-square, W.</i>

Year of Election.	
1873	McDermott, Edward, 3, <i>Whitefriars-street, E.C.</i>
1868	Macdonald, James, 7, <i>Lothbury, E.C.</i>
1871	Macdonell, James, 3, <i>Euston-square, N.</i>
1872	Macdonell, John, 1, <i>Pump-court, Temple, E.C.</i>
1873	*McEwen, Laurence T., <i>Lombard House, George-yard, Lombard-street, E.C.</i>
1856	M'Gillivray, Donald, F.I.A., 39A, <i>Moorgate-street, E.C.</i>
1871	Mackay, James Macgregor, 32, <i>Brunswick-square, Brighton.</i>
1866	McKenna, W.C., 18, <i>King-street, E.C.</i>
1871	Mackenzie, Alfred Westwood, 8, <i>Grove-villas, The Grove, Hammersmith, W.</i>
1834	Mackenzie, Right Hon. Holt, <i>Athenæum Club, S.W.</i>
1871	Mackeson, Charles, <i>The Admiralty, New-street, Spring-gardens, S.W.</i>
1870	MacLagan, David, 22, <i>George-street, Edinburgh.</i>
1863	Maclare, J. W., <i>Fallowfield, Manchester; and Conservative Club, S.W.</i>
1871	Malgarini, Frederick Lewis, 7, <i>Whitehall-place, S.W.</i>
1852	Mann, Horace, <i>Civil Service Commission, Cannon-row, Westminster, S.W.</i>
1872	Manning, The Most Rev. Archbishop, <i>Archbishop's House, Westminster, S.W.</i>
1860	Marsh, Matthew Henry, <i>Bamridge, near Andover, Hants.</i>
1834	Marshall, James Garth, <i>Headingley House, Leeds; and Monk Coniston, Amble-side.</i>
1865	Martin, Frederick, 12, <i>Fortess-terrace, N.W.</i>
1873	Martin, Henry, <i>National Bank of India, 80, King William-street, E.C.</i>
1867	Martin, James, <i>St. Brides-street, Ludgate-hill, E.C.</i>
1840	Martin, Sir James Ranald, C.B., F.R.S., 37, <i>Upper Brook-street, W.</i>
1872	*MARTIN, RICHARD BIDDULPH, M.A., 68, <i>Lombard-street, E.C.</i>
1870	Maxse, Captain Frederick A., R. N., 67, <i>Cromwell-road, South Kensington, S.W.</i>

Year of Election.	
1873	Meen, Joseph Austin, 30, Lombard-street, E.C.; and 44, Lordship-road, Stoke Newington, N.
1853	*Meikle, James, 6, St. Andrew's-square, Edinburgh.
1873	Mellor, T. Randolph, C.E., Rectory House, Martin's-lane, Cannon-street, E.C.
1861	Messent, John, F.I.A., 429, West Strand, W.C.
1872	Michell, Robert, India Office, S.W.
1873	Millar, William Henry, Cleveland Lodge, New Park-road, Brixton-hill, S.W.
1864	Minett, John Thomas, 1, Adelaide-place, E.C.
1842	Moffatt, George, 103, Eaton-square, S.W.
1872	Morgan, Octavius Vaughan, 13, Boltons, West Brompton, S.W.
1873	*Morley, Samuel, M.P., 18, Wood-street, E.C.
1873	Morton, James, Balclutha, Greenock, N.B.
1847	*MOUAT, FREDERIC JOHN, M.D. ( <i>Honorary Secretary</i> ), 12, Durham-villas, Kensington, W.
1858	Muir, Thomas, 24, York-terrace, Regent's-park, N.W.
1850	Murchison, John Henry, 8, Austin Friars, E.C.
1868	Murrow, Yorick James, 12, Tavistock-crescent, Westbourne-park, W.
1865	Nasmith, David, 4, Garden-court, Temple, E.C.
1854	Neild, Alfred, Mayfield, Manchester.
1869	Neison, Francis Gustavius Paulus, jun., 6, Great James-street, Bedford-row, W.C.
1862	Newbatt, Benjamin, F.I.A., F.R.G.S., 13, St. James's-square, S.W.
1847	*NEWMARCH, WILLIAM, F.R.S., F.I.A. ( <i>Trustee and Honorary Vice-President</i> ),
	67, Lombard-street, and Beech Holme, Nightingale-lane, Clapham-common, S.W.
1869	Newmarch, William T., A.A., Oxon (McEwen and Co.), Lombard House, George-yard, Lombard-street, E.C.
1858	Nightingale, Miss Florence, 35, South-street, W.
1871	*Noble, Benjamin, North-Eastern Bank, Newcastle-on-Tyne.

Year of Election	
1870	Noble, John, 5, Queen-square, Westminster, S.W.
1873	Noott, Major Francis Harry, <i>The Convict Prison, Dartmoor.</i>
1834	Norman, George Warde, <i>Bromley, Kent.</i>
1869	Norwood, Charles Morgan, M.P., 21, Billiter-street, E.C.
1862	Ogbourne, Charles Henry, 29, Dalhousie-square, Calcutta.
1834	*OVERSTONE, THE RIGHT HONOURABLE LORD ( <i>Honorary Vice-President</i> ), 2, Carlton-gardens, S.W.
1841	PAKINGTON, THE RIGHT HON. SIR JOHN SOMERSET, BART., M.P., G.C.B. ( <i>Honorary Vice-President</i> ), 9, Eaton-square, S.W.; and Westwood Park, Droitwich, Worcestershire.
1866	Palgrave, Robert Harry Inglis, 11, Britannia-terrace, Yarmouth, Norfolk.
1870	Parker, Josiah Samuel, 5, Featherstone-buildings, Holborn, W.C.
1869	PATTERSON, ROBERT HOGARTH, "Glasgow News" Office, 67, Hope-street, Glasgow.
1870	Pattison, William Pollard, F.I.A., 52, Brook-street, Grosvenor-square, W.
1873	Pearce, Charles William, 14, Burnley-road, Stockwell, S.W.
1837	*Pearson, Professor John, Q.C., 13, Beaufort-gardens, Brompton-road, S.W.
1871	Pennington, Frederick, 17, Hyde Park-terrace, W.
1834	Philips, Mark, Welcombe, Stratford-on-Avon.
1835	*Phillips, Sir George Richard, Bart., 22, Hill-street, Berkeley-square, W.
1859	Phillips, Henry James, 4, Ludgate-hill, E.C.
1873	Phillips, John Searle R., 4, Camp-street, Lower Broughton, Manchester.
1871	Pickering, John, Leeds.
1873	Pickstone, William, College-villas, Hampstead, N.W.
1838	*Pinckard, George Henry, F.I.A., 12, Grove-road, St. John's-wood, N.W.
1867	Plener, Ernest von, 18, Belgrave-square, S.W.

Year of Election.	
1861	Plowden, W. C., <i>Board of Revenue, Allahabad, India.</i>
1869	Pochin, Henry Davis, <i>Barn Elms, Barnes, S.W.</i>
1860	Potter, Edmund, M.P., F.R.S., <i>Camfield-place, Hatfield, Herts.</i>
1871	Power, Edward, 45, <i>Belsize-park, N.W.</i>
1867	Pratt, Robert Lindsay, <i>Darlington.</i>
1849	Presant, John, 13, <i>St. James's-square, S.W.</i>
1868	Price, William R.,
1870	Prichard, Iltudus Thomas, 4, <i>Garden-court, Temple, E.C.</i>
1871	Puleston, John Henry, 41, <i>Lombard-street, E.C.</i>
1837	*PURDY, FREDERICK, <i>Local Government Board, Whitehall, S.W.: and 35, Victoria-road, Kensington, W.</i>
1868	Purdy, William Frederick, <i>Local Government Board, Whitehall, S.W.</i>
1872	*Rabino, Joseph, <i>Credit Lyonnais, 29, Lombard-street, E.C.</i>
1858	*Radstock, The Right Honourable Lord, <i>East Sheen, Mortlake, S.W.</i>
1864	*Raleigh, Samuel, 9, <i>St. Andrew-square, Edinburgh.</i>
1860	Ramsay, Alexander Gillespie, F.I.A., <i>Canada Life Assurance, Hamilton, Canada West.</i>
1865	Ratcliff, Charles, <i>Athenæum Club, S.W.; and Wyddrington, Birmingham.</i>
1859	Rathbone, P. H., <i>Greenbank Cottage, Liverpool.</i>
1870	RAWLINSON, ROBERT, C.B., 11, <i>Boltons, West Brompton, S.W.</i>
1835	Rawson, His Excellency Rawson William, C.B., <i>Government House, Barbadoes</i>
1856	Redgrave, Alexander, <i>Government Offices, Downing-street, S.W.</i>
1834	*Redgrave, Samuel, 17, <i>Hyde-park-gate South, Kensington, W.</i>
1870	Rees, William, 4, <i>Cavendish-place, All Saints, Manchester.</i>

Year of Election.	
1867	Reid, Herbert Lloyd, 3, Eland-terrace, Lavender-hill, S.W.
1862	Reynolds, Frederick, <i>Education Department, Government Offices, Downing-street, S.W.</i>
1870	Rich, Elihu, 33 Maitland-park-road, Haverstock-hill, N.W.
1873	Ripon, The Most Hon. the Marquess of, K.G., F.R.S., &c., 1, Carlton-gardens, S.W.
1851	Robertson, Alexander, 112, Bishopsgate-street Within, E.C.
1868	Robinson, W., <i>Civil Service, Madras.</i>
1859	Rogers, Professor J. E. Thorold, M.A., 8, Beaumont-street, Oxford.
1873	Rosebery, The Right Hon. the Earl of, 2, Berkeley-square, W.
1834	*Ross, David, of Bladensburg, Rostrevor, Co. Down, Ireland.
1865	Ruck, George T., 47, Camden-road, N.W.
1834	RUSSELL, THE RIGHT HONOURABLE EARL, K.G. ( <i>Honorary Vice-President</i> ), 37, Chesham-place, S.W.
1873	Salisbury, The Most Hon. the Marquess of, P.C., F.R.S., 20, Arlington-street, S.W.
1868	Samuelson, Bernhard, M.P., Banbury.
1862	Sargent, William Lucas, Edgbaston, Birmingham.
1850	Saunders, James Ebenezer, jun., F.G.S., 9, Finsbury-circus, E.C.
1869	Sayle, Philip, jun., 89, Cannon-street, E.C.
1865	Scudamore, F. Ives, C.B., General Post Office, E.C.
1866	Senior, George, Rose Hill, Dodworth, near Barnsley.
1869	SEYD, ERNEST, 1A, Princes-street, E.C.
1873	Seyd, Richard, 1A, Princes-street, E.C.
1871	Shadwell, John Lancelot, 21, Nottingham-place, W.
1841	SHAFTESBURY, THE RIGHT HON. THE EARL OF ( <i>Honorary Vice-President</i> ), 24, Grosvenor-square, W.

Year of Election.	
1869	Shaw, John, <i>South Eastern Railway, London Bridge, E.C.</i>
1873	Sherborne, The Right Honourable Lord, <i>Sherborne-park, Northleach, Gloucestershire.</i>
1871	Sidgwick, Henry, <i>Trinity College, Cambridge.</i>
1850	Singer, Charles Douglas, <i>Compton House, Church-street, Stoke Newington, N.</i>
1873	Skoines, Henry Frost, <i>7, Argyle-street, King's Cross, W.C.</i>
1869	Smee, Alfred Hutcheson, M.R.C.S. <i>7, Finsbury-circus, E.C.</i>
1873	Smith, Edward, M.D., F.R.S., <i>140, Harley-street, S.W.</i>
1871	Smith, E. Cozens, <i>1, Old Broad-street, E.C.</i>
1872	Smith, J. G.,
1873	Smith, Col. J. T., R.E., F.I.A., <i>Foellant House, Lee, Kent.</i>
1867	*Smith, William Henry, M.P., <i>2, Hyde-park-street, W.</i>
1873	Snudden, W. L., <i>2, Lombard-street, E.C.</i>
1848	*SOPWITH, THOMAS, M.A., F.R.S., <i>103, Victoria-street, S.W.</i>
1873	Southern, George William, <i>Inspector of Coal Mines, Newcastle-on-Tyne.</i>
1855	Sowray, John Russell, <i>Office of Woods, 1, Whitehall-place, S.W.</i>
1873	Spence, John Berger, <i>75, Mark-lane, E.C.</i>
1867	*Spencer, Robert James, <i>High-street, Portsmouth.</i>
1856	*Sprague, Thomas Bond, M.A., F.I.A., <i>18, Lincoln's-inn-fields, W.C.</i>
1872	Spriggs, Joseph, <i>Dale Cottage, Foxton, near Market Harbro'.</i>
1856	*Stainton, Henry Tibbats, <i>Mountsfield, Lewisham, S.E.</i>
1872	STANHOPE, THE RIGHT HON. EARL, D.C.L. ( <i>Vice-President</i> ), <i>3, Grosvenor-place-houses, S.W.</i>
1870	Stark, William Emery, <i>1, Temple-row West, Birmingham.</i>
1855	Stott, John, F.I.A., <i>St. Vincent-place, Glasgow.</i>
1865	Strachan, Thomas Y., F.I.A., <i>Newcastle-on-Tyne.</i>
1872	Strachey, General Richard, R.E., F.R.S., <i>India Office, S.W.</i>

Year of Election.	
1864	Sutton, Henry,
1836	*Symonds, Arthur, <i>4, South-square, Gray's-inn, W.C.</i>
1873	Tait, Lawson, F.R.C.S., <i>Birmingham.</i>
1859	Tait, Patrick Macnaghten, <i>38, Belsize Park, N.W.; and Oriental Club, W.</i>
1856	Tartt, William Macdowal, <i>Sandford-place, Cheltenham.</i>
1854	TAYLER, WILLIAM, <i>28, Park-street, Grosvenor-square, W.</i>
1873	Taylor, Peter Alfred, M.P., <i>Aubrey-house, Notting-hill, W.</i>
1838	*Taylor, Major-General Pringle,
1834	*Tennent, Robert J., <i>Athenæum Club, S.W.; and Belfast.</i>
1864	*Thompson, Henry Yates, <i>32, Ennismore-gardens, S.W.</i>
1862	Thomson, Henry, <i>1, Dale-street, Liverpool.</i>
1868	Thomson, James, <i>35, Nicholas-lane, E.C.</i>
1871	Thomson, Thomas D., <i>117, Cannon-street, E.C.</i>
1871	Thurlow, The Hon. Thomas John Hovell,
1855	Tomline, George, M.P., <i>1, Carlton House-terrace, S.W.</i>
1873	Tomson, Whitbread, <i>London and County Bank, 21, Lombard-street, E.C.</i>
1843	Tottie, John William, <i>Coniston Hall, Bell Bush, Leeds.</i>
1868	*Treatt, Frank Burford, <i>Sydney, New South Wales</i>
1868	Tritton, Joseph Herbert, <i>54, Lombard-street, E.C.</i>
1852	Tuke, Harrington, M.D., <i>37, Albemarle-street, W.; and Manor House, Chiswick, W.</i>
1866	Tully, Thomas, <i>69, Great Queen-street, Lincoln's-inn-fields, W.C.</i>
1834	*Turnbull, The Rev. T. S., F.R.S., <i>University Club, S.W.; and Blofield, Norfolk.</i>
1867	Turner, Thomas <i>Kingsdown, Bristol.</i>

Year of Election.	
1873	Tweeddale, The Most Hon. the Marquess of, K.T., G.C.B., <i>United Service Club, S.W.</i>
1841	Tyndall, William Henry, 92, <i>Cheapside, E.C.</i>
1873	Underdown, Robert George, <i>Sheffield and Manchester Railway, Manchester.</i>
1834	Urquhart, David,
1842	VALPY, RICHARD, <i>Board of Trade, Whitehall-gardens, S.W.</i>
1871	Vanderbyl, Philip, 51, <i>Porchester-terrace, W.</i>
1860	Van de Weyer, His Excellency M. Sylvain, 21, <i>Arlington-street, W.</i>
1873	Venables, Alfred, 30, <i>Royal Exchange, E.C.</i>
1868	Venn, Albert John,
1873	Vivian, Major Quintus, J.P., D.L., F.R.G.S., 17, <i>Chesham-street, S.W.</i>
1861	Waddell, James, 12, <i>Queen Victoria-street, E.C.</i>
1873	Wakeford, Henry, 44, <i>Parliament-street, S.W.</i>
1857	*Walford, Cornelius, F.I.A., <i>Enfield House, Belsize-park-gardens, N.W.</i>
1871	*Walker, R. Bailes, <i>Sharpe-street, Prestwich, Manchester.</i>
1854	Walker, Thomas, B.A., F.I.A., <i>Shrewsbury-lane, Plumstead, Kent, S.E.</i>
1868	Wallis, Charles, J., 1, <i>Springfield-road, St. John's Wood, N.W.</i>
1850	Walter, John, M.P., 40, <i>Upper Grosvenor-street, W.</i>
1873	Waring, Charles, 10, <i>Victoria-chambers, Westminster, S.W.</i>
1862	Washbourne, Buchanan, M.D.,
1865	Waterhouse, Edwin, B.A., 13, <i>Gresham-street, E.C.</i>
1873	Watkins, Sir Edward W., <i>Northenden, Manchester.</i>

Year of Election.	
1873	Watson, J. Forbes, M.D., <i>India Museum, India Office, S.W.</i>
1865	Watson, William West, <i>Glasgow.</i>
1851	Webb, Charles Locock, <i>5, New-square, Lincoln's-inn, W.C.</i>
1865	Webster, Alphonsus, <i>44, Mecklenburg-square, W.C.</i>
1873	Webster, James H., <i>Keith-lodge, Upper Norwood, S.E.</i>
1869	Weguelin, Christopher, <i>55, Lower Belgrave-street, S.W.</i>
1873	Weguelin, Thomas Matthias, M.P., <i>44, Grosvenor-gardens, S.W.</i>
1870	Weil, Salomon, <i>27, Clifton-Gardens, Maida-vale, W.</i>
1873	Welby, Reginald Earle, <i>Treasury, Whitehall, S.W.</i>
1855	Weldon, James Walton, <i>1, St. James's-square, S.W.</i>
1873	Wellington, His Grace the Duke of, K.G., &c., &c., <i>Apsley House, Piccadilly, W.</i>
1873	Wells, Lewis, <i>66, Old Broad-street, E.C.</i>
1855	Welton, Thomas Abercrombie, <i>6, Offerton-road, Clapham, S.W.</i>
1836	*Whishaw, James, <i>32, Harewood-square, N.W.</i>
1859	Whitbread, Samuel, M.P., <i>2, Queen's-gate Gardens, Kensington, W.</i>
1858	White, George Symmons, <i>Fairford, Gloucestershire.</i>
1868	White, James, M.P., <i>14, Chichester-terrace, Brighton.</i>
1863	White, Leedham, <i>Millbank-street, S.W.</i>
1871	White, William, <i>57, Charing-cross, S.W.</i>
1873	Whitehead, Jeffery, <i>39, Throgmorton-street, E.C.</i>
1860	Willans, John W., <i>Baycliffe, near Brighouse.</i>
1864	Williams, Frederick Bessant, <i>834, Old Kent-road, S.E.</i>
1870	Williams, H. R., <i>3, Lime-street, E.C.</i>
1868	Williams, Rowland L. V., <i>7, King's-bench-walk, Temple, E.C.</i>
1868	Wilson, Charles Rivers, <i>Treasury, and 3, Chester-street, Belgrave-square, S.W.</i>

Year of Election.	
1872	Wilson, Edward, <i>Hayes Place, near Bromley, Kent.</i>
1871	Wilson, J. Edwards, <i>Brunswick House, Bromley, Kent.</i>
1872	*Winch, William R., <i>Camden Park, Chislehurst,</i>
1868	Wood, H. W. I. ( <i>Calcutta</i> ), <i>Care of Messrs. Richardson, Cornhill, E.C.</i>
1873	Woods, Henry, M.P., <i>21, Hyde-park Gardens, W.</i>
1838	Woolhouse, Wesley Stoker Barker, <i>Alwyne Lodge, Alwyne-road, Canonbury, N.</i>
1864	*Wyatt-Edgell, Alfred, <i>40, Lower Grosvenor-street, Grosvenor-square, W. and Stanford Hall, Rugby.</i>
1838	*Wyatt-Edgell, Rev. Edgell, <i>40, Lower Grosvenor-street, Grosvenor-square, W.; and Stanford Hall, Rugby.</i>
1872	Yeatman, Morgan, <i>Shawfield, Bromley, Kent.</i>
1849	*Young, Charles Baring, <i>12, Hyde-park Terrace, W.</i>

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\*\*\* The Executive Committee request that any inaccuracy in the foregoing list may be pointed out to the ASSISTANT SECRETARY without delay, and that all changes of address may be communicated.

## HONORARY MEMBERS.

HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G.,  
*Honorary President.*

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## Belgium.

**Brussels** ..... SIR HENRY PAGE TURNER BARRON, *British Legation.*

„ ..... M. XAVIER HEUSCHLING, *Chef de Division au Ministère de l'Intérieur du Royaume de Belgique, Secrétaire de la Commission Centrale de Statistique*

„ ..... M. V. MISSON.

„ ..... M. ADOLPHE QUETELET, *Directeur de l'Observatoire Royal de Bruxelles.*

„ ..... M. AUGUSTE VISSCHERS, *Conseiller au Conseil des Mines, Membre de la Commission Centrale de Statistique.*

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„ ... DR. SCHLEISNER.

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„ ..... M. MICHEL CHEVALIER, *Membre de l'Institut, Professeur au Collège de France, Ancien Député, et Sénateur.*

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 „ ..... OTTO HUBNER.  
**Bonn** ..... DR. MENDELSSOHN.  
**Frankfort** ..... M. HEINRICH MEIDINGER.  
**Hamburg** ..... DR. JULIUS.  
**Heidelberg** ..... PROFESSOR FRIEDLANDER.  
**Jena** ..... PROFESSOR BRUNO HILDEBRAND.  
**Munich** ..... DR. KARL L. SEUFFERT, *Chef de Bureau, Department of Trade and Public Works.*

### Greece.

- Athens** ..... A. MANSOLAS.

### Italy.

- Florence** ..... SIGNOR GIOVANNI FLECHIA, *Librarian and Keeper of the Archives of the Senate of the Kingdom of Sardinia.*  
**Genoa** ..... SIGNOR FABRIZIO FABIANI, *Piazza Colombo, 2.*  
**Naples** ..... IL GIUDICE ARPINO.  
**Palermo** ..... SIGNOR FERRARA.  
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 „ ..... MARCHESE AVV. ERMENEGILDO DE CINQUE QUINTILI, *Segretario Generale della Commission degli Ospedali di Roma.*

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### Russia.

- St. Petersburg** M. DE BOUSCHEN.  
 „ ..... THOMAS MICHELL, *Attaché to H. M.'s Embassy.*  
 „ ..... HIS EXCELLENCY M. SEMENOW.  
 „ ..... DR. J. B. VERNADSKY, *Councillor of State.*

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- Madrid** ..... SEÑOR JOSE MAGAZ JAUME.  
 „ ..... SEÑOR RAMON DE LASAGRA.  
 „ ..... SEÑOR JUAN B. TR'U' PITA.  
 „ ..... COUNT RIPALDA.

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**Christiania**..... PROFESSOR ASCHEHOUG.

"..... DR. HOLST.

**Stockholm** .... DR. FREDERIC THEODOR BERG, *Chief of the Statistical Department, Home Office, Stockholm.*

"..... M. EDWARD SCHEUTZ.

## Switzerland.

**Geneva** ..... M. MALLET.

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**Ceylon** ..... THOMAS B. STEPHEN.

## AUSTRALASIA.

## South Australia.

**Adelaide** ..... JOSIAH BOOTHBY, *Under Secretary to the Government of South Australia.*

## Tasmania.

**Hobart Town** .. THOMAS EWING.

".... E. SWARBRECK HALL, M.R.C.S.

## Victoria.

**Melbourne** ..... WILLIAM HENRY ARCHER, *Registrar-General.*

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## Canada.

**Ottawa** ..... WILLIAM SPRAGGE.

## United States.

**Albany, N.Y.** .... THE HON. WILLIAM BARNES, *Superintendent Insurance Department.***Boston, Mass.** ... JOHN E. SANDFORD, *Insurance Commissioner.***Dorchester, Mass.** DR. EDWARD JARVIS, *President of the American Statistical Association, Boston.***Norwich, Conn.** The Hon. DAVID WELLS.

NOTE.—HONORARY MEMBERS are politely requested to inform the Assistant Secretary of any *inaccuracies or deficiencies* in the names and descriptions given, and to communicate hereafter any changes therein.

## RULES OF THE STATISTICAL SOCIETY.

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### *Objects of the Society.*

1. THE Statistical Society was established to collect, arrange, digest, and publish facts illustrating the condition and prospects of society, in its material, social and moral relations. These facts are for the most part arranged in tabular forms, and in accordance with the principles of the numerical method.

The Society not only collects new materials, but condenses, arranges, and publishes those already existing, whether unpublished or published in diffuse and expensive forms, in the English or in any foreign language.

The Society likewise promotes the discussion of legislative and other public measures from the statistical point of view. These discussions form portions of the Transactions of the Society.

### *Constitution of the Society.*

2. The Society consists of Fellows and Honorary Members, elected in the manner laid down in the following rules.

### *Number of Fellows and Honorary Members.*

3. The number of Fellows shall be unlimited. Foreigners or British subjects of distinction residing abroad may be admitted as Honorary Members: of whom the number shall not be more than seventy at any one time.

### *Proposal of Fellows.*

4. Every Candidate for admission as a Fellow of the Society, shall be proposed by two or more Fellows, who, shall certify from their personal knowledge of him or of his works, that he is a fit person to be admitted a Fellow of the Statistical Society. Every such certificate having been read and approved at a Meeting of the Council, shall be suspended in the meeting-room of the Society until the following Ordinary

Meeting, at which the vote shall be taken upon it.

### *Election of Fellows.*

5. In the election of Fellows, the votes shall be taken by ballot. No person shall be admitted unless at least sixteen Fellows vote, and unless he have in his favour three-fourths of the Fellows voting.

### *Admission of Fellows.*

6. Every Fellow elect shall appear for his admission on or before the third Ordinary Meeting of the Society after his election, or within such time as shall be granted by the Council.

The manner of admission shall be thus:—

Immediately after the reading of the minutes, the Fellow elect, having first paid his subscription for the current year or his composition, shall sign the obligation contained in the Fellowship-book, to the effect following:—

“ We, who have underwritten our  
“ names, do hereby undertake, each for  
“ himself, that we will endeavour to  
“ further the good of the Statistical  
“ Society for improving Statistical  
“ Knowledge, and the ends for which  
“ the same has been founded; that  
“ we will be present at the Meet-  
“ ings of the Society as often as con-  
“ veniently we can, and that we will  
“ keep and fulfil the Rules and Orders  
“ of this Society: provided that when-  
“ soever any one of us shall make known,  
“ by writing under his hand, to the  
“ President for the time being, that he  
“ desires to withdraw from the Society,  
“ he shall be free thenceforward from  
“ this obligation.”

Whereon the President, taking him by the hand, shall say,—“ *By the auth-  
“ rity and in the name of the Statis-  
“ tical Society I do admit you a  
“ Fellow thereof.*”

Upon their admission Fellows shall have the right of attaching to their names the letters F.S.S.

#### *Admission of Honorary Members.*

7. There shall be Two Meetings in the year, on such days as shall be hereafter fixed by the Council, at which *Honorary Members* may be elected. No Honorary Member can be recommended for election but by the Council. Any Member of the Council may propose a Foreigner or British subject of distinction residing abroad at any Meeting of the Council, delivering at the same time a written statement of the qualifications, offices held by, and published works of the person proposed; and ten days' notice at least shall be given to every Member of the Council, of the day on which the Council will vote by ballot on the question whether they will recommend the person proposed. No such recommendation to the Society shall be adopted unless at least three-fourths of the votes are in favour thereof. Notice of the recommendation shall be given from the chair at the Meeting of the Society next preceding that at which the vote shall be taken thereon. No person shall be elected an Honorary Member unless sixteen Fellows vote and three-fourths of the Fellows voting be in his favour.

The Council shall have power to elect as Honorary Members, the President for the time being of the Statistical Societies of Dublin, Manchester, and Paris, and the President of any other Statistical Society at home or abroad.

#### *Payments by Fellows.*

8. Every Fellow of the Society shall pay a yearly subscription of *Two Guineas*, or may at any time compound for his future yearly payments by paying at once the sum of Twenty Guineas.

#### *Defaulters.—Withdrawal of Fellows.*

9. All yearly payments are due in advance on the 1st of January, and if any Fellow of the Society have not paid his subscription before the 1st of July, he shall be applied to in writing by the Secretaries, and if the same be not paid before the 1st of January of the second

year, a written application shall again be made by the Secretaries, and the Fellow in arrear shall cease to receive the Society's publications, and shall not be entitled to any of the privileges of the Society until such arrears are paid; and if the subscription be not discharged before the 1st of February of the second year, the name of the Fellow thus in arrear shall be exhibited as a defaulter on a card suspended in the meeting-rooms; and if, at the next Anniversary Meeting, the amount still remain unpaid, the defaulter shall be announced to be no longer a Fellow of the Society, the reason for the same being at the same time assigned. No Fellow of the Society can withdraw his name from the Society's books, unless all arrears be paid; and no resignation will be deemed valid unless a written notice thereof be communicated to the Secretaries. No Fellow shall be entitled to vote at any Meeting of the Society until he shall have paid his subscription for the current year.

#### *Expulsion of Fellows.*

10. If any Fellow of the Society, or any Honorary Member, shall so demean himself that it would be for the honour of the Society that he longer continue to be a Fellow or Member thereof, the Council shall take the matter into consideration; and if the majority of the Members of the Council present at some Meeting (of which and of the matter in hand such Fellow or Member, and every Member of the Council, shall have due notice) shall decide by ballot to recommend that such Fellow or Member be expelled from the Society, the President shall at the next Ordinary Meeting announce to the Society the recommendation of the Council, and at the following Meeting the question shall be decided by ballot, and if at least three-fourths of the number voting are in favour of the expulsion, the President shall forthwith cancel the name in the Fellowship-book, and shall say,—

“ By the authority and in the name “ of the Statistical Society, I do declare “ that A. B. (naming him) is no longer “ a Fellow (or Honorary Member) “ thereof.”

And such Fellow or Honorary Mem-

ber, shall thereupon cease to be of the Society.

#### *Trustees.*

11. The property of the Society shall be vested in *three Trustees*, chosen by the Fellows. The Trustees are eligible to any other offices in the Society.

#### *President, Council, and Officers.*

12. The Council shall, independent of the Honorary Vice-Presidents, consist of thirty-one Members, of whom one shall be the President, and four be nominated Vice-Presidents. The Council shall be elected as hereafter provided. Any five of the Council shall be a quorum. From the Council shall be chosen a *Treasurer* and *three Secretaries*, one of whom shall be a Foreign Secretary. Six Fellows, at least, who were not of the Council of the previous year, shall be annually elected.

#### *Election of President and Officers.*

13. The President shall be chosen yearly by the Fellows. The same person shall not be eligible more than two years in succession.

The former Presidents who are continuing Fellows of the Society shall be Honorary Vice-Presidents; four Vice-Presidents shall be yearly chosen from the Council by the President.

Any Honorary Vice-President may take part in the deliberations of the Council on expressing a wish to that effect: and when attending the Meetings of the Council, shall exercise all the rights and powers of a Member of the Council.

The Treasurer and Secretaries shall be chosen yearly by the Fellows from the Council.

#### *Election of Council.*

14. The Council shall, previously to the Anniversary Meeting, nominate, by ballot, the *Fellows whom they recommend* to be the next President and Council of the Society. They shall also recommend for election a Treasurer and three Secretaries. Notice shall be sent to every Fellow whose residence is known to be within the limits of the metropolitan post, at least a fortnight before the Anniversary Meeting, of the

names of Fellows recommended by the Council.

#### *Extraordinary Vacancies.*

15. On any *extraordinary vacancy* of the Office of the President, or other Officer of the Society, or in the Council, the Secretaries shall summon the Council with as little delay as possible, and a majority of the Council, thereupon meeting in their usual place, shall, by ballot, and by a majority of those present, choose a new President, or other Officer of the Society, or Member of the Council, to be so until the next Anniversary Meeting.

#### *Committees.*

16. The Council shall have power to appoint *Committees of Fellows* and also an Executive Committee of their own body. The Committees shall report their proceedings to the Council. No report shall be communicated to the Society which is not approved by the Council.

#### *Meetings Ordinary and Anniversary.*

17. The *Ordinary Meetings* of the Society shall be monthly, or oftener, during the Session, which shall be from the 1st of November to the 1st of July, both inclusive, on such days and at such hours as the Council shall declare. The *Anniversary Meeting* shall be held on such day in June of each year as shall be appointed by the Council for the time being.

#### *Business of Ordinary Meetings.*

18. The business of the *Ordinary Meetings* shall be to admit Fellows, to read and hear reports, letters, and papers on subjects interesting to the Society. Nothing relating to the rules or management of the Society shall be discussed at the Ordinary Meetings, except that the *Auditors' Report* shall be received at the Ordinary Meeting in *February*, and that the Minutes of the Anniversary Meeting, and of every Special General Meeting, shall be confirmed at the next Ordinary Meeting after the day of such Anniversary or Special General Meeting. *Strangers* may be introduced to the Ordinary

Meetings, by any Fellow, with the leave of the President, Vice-President, or other Fellow presiding at the Meeting.

#### *Business of Anniversary Meeting.*

19. The business of the *Anniversary Meeting* shall be to elect the Officers of the Society, and to discuss questions on its rules and management. No Fellows or Honorary Members shall be proposed or admitted at the Anniversary Meeting. No Fellow shall moot any question on the rules or management of the Society at the Anniversary Meeting, unless after *three weeks' notice* thereof given to the Council, but amendments to any motion may be brought forward without notice, so that they relate to the same subject of motion. The Council shall give fourteen days' notice to every Fellow of all questions of which such notice shall have been given to them.

#### *Special General Meetings.*

20. The Council may, at any time, call a *Special General Meeting* of the Society when it appears to them necessary. Any ten Fellows may require a Special General Meeting to be called, by notice in writing signed by them, delivered to one of the Secretaries at an Ordinary Meeting, specifying the questions to be moved. The Council shall, within one week of such notice, appoint a day for such Special General Meeting, and shall give one week's notice of every Special General Meeting, and of the questions to be moved, to every Fellow within the limits of the metropolitan post, whose residence is known. No business shall be brought forward at any Special General Meeting other than that specified in the notice for the same.

#### *Auditors.*

21. At the *first Ordinary Meeting* of each year, the Fellows shall choose two *Auditors*, not of the Council, who, with one of the Council, chosen by the Council, shall audit the Treasurer's accounts, and report thereon to the Society, which report shall be presented at the Ordinary Meeting in February. The Auditors shall be empowered to examine into the particulars of all expenditure of the funds of the Society

where they shall see occasion, and may report their opinion upon any part of it.

#### *Duties of the President.*

22. The *President* shall preside at all Meetings of the Society, Council, and Committees, which he shall attend, and in case of an equality of votes, shall have a second or casting vote. He shall sign all diplomas of admission of Honorary Members. He shall admit and expel Fellows and Honorary Members, according to the rules of the Society.

#### *Duties of the Treasurer.*

23. The *Treasurer* shall receive all moneys due to, and pay all moneys due from, the Society, and shall keep an account of his receipts and payments. No sum exceeding Ten Pounds shall be paid but by order of the Council, excepting always any lawful demand for rates or taxes. He shall invest the moneys of the Society in such manner as the Council shall from time to time direct.

#### *Duties of the Secretaries.*

24. The *Secretaries* shall, under the control of the Council, conduct the correspondence of the Society; they or one of them shall attend all Meetings of the Society and Council, and shall have the care of duly recording the Minutes of the Proceedings. They shall issue the requisite notices, and read such papers to the Society as the Council may direct.

#### *Powers of the Vice-Presidents.*

25. A *Vice-President*, whether Honorary or nominated, in the chair, shall act with the power of the President, in presiding and voting at any Meeting of the Society or Council, and in admitting Fellows; but no Vice-President shall be empowered to sign diplomas of admission of Honorary Members, or to expel Fellows. In the absence of the President and Vice-Presidents, any Fellow of the Society may be called upon, by the Fellows then present, to preside at an Ordinary Meeting. The Fellow so presiding may admit Fellows, but shall not be empowered to act otherwise as President, or Vice-President.

*Powers of the Council.*

26. The Council shall have control over the papers and funds of the Society, and may, as they shall see fit, direct the publication of papers and the expenditure of the funds, so, that they shall not at any time contract engagements on the part of the Society beyond the amount of the balance that would be at that time in the Treasurer's hands, if all pre-existing debts and liabilities had been satisfied.

27. The Council shall be empowered at any time to frame *Regulations* not inconsistent with these rules, which shall be, and remain in force until the next Anniversary Meeting at which they shall be either affirmed or annulled; but no Council shall have power to renew Regulations which have once

been disapproved at an Anniversary Meeting.

28. No Dividend, Gift, Division, or Bonus in money shall be made by the Society, unto or between any of the Fellows or Members, except as herein-after provided.

29. The Council shall publish a Journal of the Transactions of the Society, and such other Statistical Publications, as they may determine upon, and may from time to time pay such sums to Editors and their assistants, whether Fellows of the Society or not, as may be deemed advisable.

30. All communications to the Society are the property of the Society, unless the Council allow the right of property to be specially reserved by the Contributors.

## REGULATIONS OF THE LIBRARY.

1. THE Library is open daily from Ten A.M. till Five P.M., except on Saturdays, when it closes at Two P.M.; and it is entirely closed during the month of September.

2. Fellows of the Society are permitted to take out Books on making personal application, or by letter addressed to the Librarian.

3. Fellows are not to have more than two works at a time, nor keep any work longer than a month; but when a work is returned, it can be re-borrowed by the same Fellow, provided it has not been bespoken in the interim by another Fellow.

4. Scientific Journals and Periodicals are not circulated until the volumes are completed and bound.

5. Cyclopaedias and works of reference are not circulated.

6. Any Fellow damaging a work, either replaces the work, or pays a fine equivalent to its value.

7. Works taken from the shelves for reference are *not* to be replaced, but must be laid on the Library table.

8. The Secretaries shall report to the Council any infringement of these Regulations.

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By a resolution of the Council, dated 12th May, 1854, the price of back numbers of the Journal of the Society, charged to Fellows, was raised from one-half to three-fifths of the publishing price.

Any single number may be had, *by Fellows only*, at the Society's Rooms, 12, St. James's Square, S.W.

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NOTE.—One or two Numbers are now out of print.

## AN OUTLINE OF THE OBJECTS OF THE SOCIETY.

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THE *Statistical Society* of London was founded, in pursuance of a recommendation of the British Association for the Advancement of Science, on the 15th of March, 1834, for the purpose of collecting, arranging, and publishing facts calculated to illustrate the position and prospects of Society, and especially facts which can be stated numerically and arranged in tables. The collection of new statistical materials, it was contemplated, would form only one part of the Society's labours; the condensation, arrangement, and publication of those already existing, whether unpublished, or published only in an expensive or diffuse form, or in foreign languages, being a work of almost equal usefulness.

It was also a prominent object of the Society to form a complete Statistical Library as rapidly as its funds would permit.

Such were the original aims and objects of the Society; and now that it is in the *fortieth* year of a prosperous existence, its Fellows have every reason to revert to them with satisfaction; for it is seldom that the first designs of a public association for the advancement of Science are carried out with a success so complete as has been achieved in this instance.

**WHAT IT HAS DONE.**—The Society now possesses a valuable library and a reading room; its ordinary meetings, held monthly from November to June, have cultivated among its Fellows an active spirit of investigation, and brought out the valuable results of much individual labour; its Quarterly Journal, in which the papers read before the Fellows are printed *in extenso*, with the discussions thereon, forms of itself a valuable library of reference.

The Society has originated and statistically conducted several inquiries on subjects of economic or social interest. The most recent work of the kind relates to the complicated question of local taxation in England. The instructive Prize Essays of Mr. R. H. Inglis Palgrave and Mr. Scott on that question will be found in the Society's Journal for 1871.

**WHAT IT PROPOSES TO DO.**—The present is deemed a favourable moment for reconsidering the scientific work of the Society, so far as it depends on the frequency and scope of its ordinary meetings, and the extent and character of its library and published Transactions.

At the recent International Statistical Congress in St. Petersburg, a permanent commission was appointed to watch over the progress of statistical research; so that the results of the deliberations which take place at those gatherings may, in their international aspects, be as far as possible utilized during the interval of consecutive meetings. To that important work the Fellows and Members of this Society can afford material aid.

In order that the Society may extend its sphere of useful activity, and accomplish the various ends indicated, an increase in its numbers and revenue is most desirable.

Should that increase be realised, the Society might become a Publishing Society for Standard Works on Statistical Science out of print or scarce ; and could gather together a complete collection of the best statistical authorities in English, French, German, and Italian. A well-arranged library of reference of the kind projected does not at present exist in England.

A change in the character and contents of the Journal is under consideration, with the object of making it a still more useful and authentic storehouse of statistical facts of interest and importance, useful alike to all engaged in legislation, in local government, and in the many active movements which pre-eminently distinguish this country.

The Society consists of Fellows and of Honorary Members. The principal States of Europe and America, British India and the Crown Colonies, are represented by the "Honorary Members." The organization of the Society has from its inception been purposely cosmopolitan, and it carefully cultivates a connexion with the several local societies of the Empire, and a correspondence with those of Foreign Countries.

Fellows elected in or after the month of June are exempt from paying their subscription for the current year. The Journal of the Society, published quarterly, is distributed gratuitously to all the Fellows ; its Library is one of circulation ; and its Rooms and its Monthly Meetings are of great resort.

Proposal Papers and any furthur information will be forwarded, on application, by the Assistant Secretary.

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## THE HOWARD MEDAL.

THE Council of the Statistical Society have given effect to the views of the President, Dr. Guy, F.R.S., regarding John Howard, and his claim to be considered at least as much a Statist as a Philanthropist, by establishing a Howard Medal. This Medal is to be given every year to the author of the best essay on some subject in social statistics, giving a preference to those in which Howard himself was most interested. The subject of the essay for which the Medal will be given in 1874 (the centenary of the year in which Howard achieved his Parliamentary triumph) is "The State of Prisons, and the Condition and Treatment of Prisoners in the Prisons of England and Wales during the last half of the Eighteenth Century, as set forth in Howard's 'State of Prisons' and his work on 'Lazarettos.'" Full particulars may be obtained on application to the Assistant Secretary of the Statistical Society, 12, St. James's Square, S.W.

THOSE persons who are inclined to benefit the Society by legacies are recommended to adopt the following

### FORM OF BEQUEST.

I give and bequeath unto the Statistical Society of London, the sum of £ , such legacy to be paid out of such part of my personal estate, not specifically bequeathed, as the law permits to be appropriated by will to such a purpose.

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NOTE A.—All gifts by will to the Society of land, or of money secured on, or directed to be secured on, or to arise from the sale of, or directed to be laid out in the purchase of, land, will be void. Gifts may be made by will of stock in the public funds, shares or debentures of railway or other joint-stock companies, or money to be paid out of the testator's pure personal estate, or of personal chattels.

NOTE B.—Bequests may be made either for the general purposes of the Society, or to the Society's "Building Fund," which has been recently established.











